

## **EXHIBIT D**

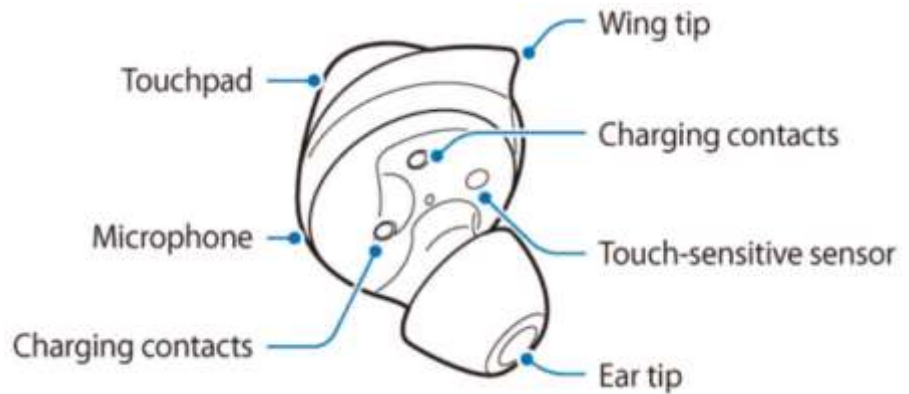
***SNIK LLC v. SAMSUNG ELECTRONICS CO., LTD., et al.***  
**EDTX Case No. 19-cv-00387-JRG**  
**Preliminary Infringement Contentions re**  
**U.S. Patent No. US9769556B2**

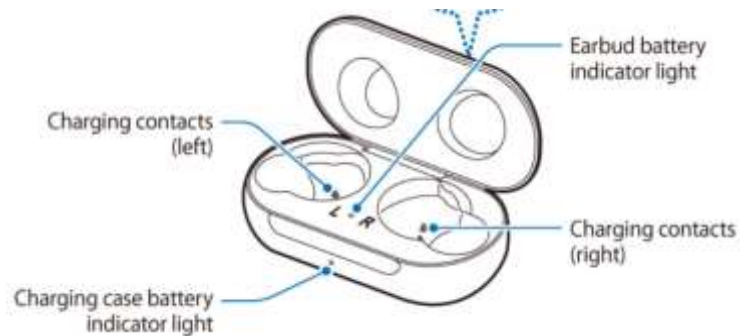
**US9769556B2**

- I. Asserted claims:
  - a. 1-3; 5-11; 13-20; 22-55
- II. Accused apparatus, products, devices, processes, methods, acts or instrumentalities:
  - a. Samsung Galaxy Buds; Samsung Galaxy Buds+ (also styled Samsung Galaxy Buds Plus); Samsung Level U Pro; Samsung Level U Pro ANC
- III. Snik LLC is informed and believes that the accused products, devices, processes, methods, acts or instrumentalities infringe either literally or through the doctrine of equivalents.
- IV. US9769556B2 claims priority to provisional application Ser. No. 61/601722, filed on February 22, 2012, which is incorporated herein by this reference
- V. References:

- [1] [http://downloadcenter.samsung.com/content/MC/201902/20190221105505228/EB/Len/start\\_here.html](http://downloadcenter.samsung.com/content/MC/201902/20190221105505228/EB/Len/start_here.html)
- [2] <https://www.inverse.com/article/53923-galaxy-buds-airpods-samsung-rival>
- [3] <https://imgur.com/RoKIYKl>
- [4] <https://www.broadcom.com/company/news/product-releases/2389392>
- [5] <https://www.samsung.com/global/galaxy/galaxy-buds/specs/>
- [6] <https://www.samsung.com/global/galaxy/galaxy-buds/>
- [7] [https://www.samsung.com/us/mobile/audio/galaxy-buds/?cid=sem-mktg-pfs-aacc-22019-22493&gclid=EAIAIQobChMIm87h3M-h5QIVesRkCh21hgQBAAAYASAAEgKrUPD\\_BwE&gclsrc=aw.ds](https://www.samsung.com/us/mobile/audio/galaxy-buds/?cid=sem-mktg-pfs-aacc-22019-22493&gclid=EAIAIQobChMIm87h3M-h5QIVesRkCh21hgQBAAAYASAAEgKrUPD_BwE&gclsrc=aw.ds)
- [8] [https://www.engadget.com/2019/03/13/samsung-galaxy-buds-review-true-wireless-earbuds/?guccounter=1&guce\\_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLnNvbS8&guce\\_referrer\\_sig=AQAAAFjM2X3\\_oJV6vXg0zQ9KIGN5Ke71pNu2nAvfnfvVjm\\_ZcxZfPOQHSMUwe8Vr8buKTKISH\\_itKbAMRAiwWkhiPxPtsajGhSvRHOMnfGM-CkbP-HYe8T-nG-FM0iyBZtacs7NjOEDNlaOKkqPPpL3QKGUAMA5tkaw6cnqu1G3nhuA](https://www.engadget.com/2019/03/13/samsung-galaxy-buds-review-true-wireless-earbuds/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLnNvbS8&guce_referrer_sig=AQAAAFjM2X3_oJV6vXg0zQ9KIGN5Ke71pNu2nAvfnfvVjm_ZcxZfPOQHSMUwe8Vr8buKTKISH_itKbAMRAiwWkhiPxPtsajGhSvRHOMnfGM-CkbP-HYe8T-nG-FM0iyBZtacs7NjOEDNlaOKkqPPpL3QKGUAMA5tkaw6cnqu1G3nhuA)
- [9] Samsung Level U Pro User Manual
- [10] Samsung Level U Pro ANC EO-BG935 User Manual
- [11] Image of CSR8675 System on Chip in Level U Pro Products taken on 10/16/2019
- [12] Qualcomm® CSR8675 Bluetooth Audio Platform

- [13] Samsung Level U Pro Product Packaging
- [14] Samsung Level U Pro ANC Product Packaging
- [15] <https://news.samsung.com/global/hands-on-review-of-the-all-new-galaxy-buds>
- [16] <https://www.samsung.com/us/mobile/audio/galaxy-buds/>
- [17] <https://news.samsung.com/global/the-secrets-behind-galaxy-buds-premium-audio-performance>
- [18] [http://downloadcenter.samsung.com/content/UM/201612/20161222154650724/EO-BG935\\_UM\\_Rev.1.2\\_161222.pdf](http://downloadcenter.samsung.com/content/UM/201612/20161222154650724/EO-BG935_UM_Rev.1.2_161222.pdf)
- [19] <https://www.samsung.com/us/audio/headphones/in-ear/level-u-pro-active-noise-canceling-eo-bg935cbegus/>
- [20] <https://news.samsung.com/global/samsung-takes-sound-to-the-next-level-with-level-u-pro-anc>
- [21] <https://www.samsung.com/us/audio/headphones/in-ear/level-u-pro-wireless-headphones-bronze-eo-bn920cfegus/>
- [22] [https://www.bhphotovideo.com/lit\\_files/124135.pdf](https://www.bhphotovideo.com/lit_files/124135.pdf)
- [23] <http://www.52audio.com/archives/24983.html>
- [24] <https://www.samsung.com/au/support/mobile-devices/using-the-samsung-galaxy-buds/>
- [25] <https://www.youtube.com/watch?v=vRZNxa1bozA>
- [26] <https://www.sammobile.com/news/galaxy-buds-plus-teardown-confirms-most-repairable-tws/>
- [27] <https://www.samsung.com/us/mobile/audio/galaxy-buds-plus/specs/>
- [28] <https://www.samsung.com/us/mobile/audio/galaxy-buds-plus/>
- [29] <https://www.samsung.com/us/support/owners/product/galaxy-buds-plus>
- [30] [http://downloadcenter.samsung.com/content/UM/202003/20200306230854916/WEA\\_SM-R175\\_Galaxy\\_Buds\\_Plus\\_EN\\_IBG\\_030420\\_FINAL.pdf](http://downloadcenter.samsung.com/content/UM/202003/20200306230854916/WEA_SM-R175_Galaxy_Buds_Plus_EN_IBG_030420_FINAL.pdf)
- [31] <https://www.samsung.com/global/galaxy/galaxy-buds-plus/specs/>
- [32] Teardown Photographs Taken on 04/12/2020 and 05/14/2020
- [33] Galaxy Buds+ User Manual at [http://downloadcenter.samsung.com/content/MC/202003/20200318123539528/EB/Len/003\\_basics\\_3.html#1](http://downloadcenter.samsung.com/content/MC/202003/20200318123539528/EB/Len/003_basics_3.html#1)
- [34] [https://www.samsung.com/us/mobile/audio/galaxy-buds-plus/?cid=sem-mktg-pfs-aacc-us-google-na-03012020-169931-&ds\\_e=GOOGLE-cr:0-pl:268643744-&ds\\_c=FF~Galaxy+Buds+-+Core+Brand+CN~GBP+PH~on+MK~usnat+BS~me+PR~wiaud+SB~galbup+PK~CPL+FS~lo+CA~kew+MD~h+KS~ba+MT~bm+m-&ds\\_ag=AG~Samsung+Galaxy+Buds+MK~usnat+AT~ta+MD~h+AI~No-&ds\\_k=%2Bsamsung+%2Bgalaxy+%2Bbuds&qclid=EAiaIQobChMIv4aCrIPm6AIV3x-tBh3m1QZ6EAAYASAAEgIYPvD\\_BwE&gclid=aw.ds](https://www.samsung.com/us/mobile/audio/galaxy-buds-plus/?cid=sem-mktg-pfs-aacc-us-google-na-03012020-169931-&ds_e=GOOGLE-cr:0-pl:268643744-&ds_c=FF~Galaxy+Buds+-+Core+Brand+CN~GBP+PH~on+MK~usnat+BS~me+PR~wiaud+SB~galbup+PK~CPL+FS~lo+CA~kew+MD~h+KS~ba+MT~bm+m-&ds_ag=AG~Samsung+Galaxy+Buds+MK~usnat+AT~ta+MD~h+AI~No-&ds_k=%2Bsamsung+%2Bgalaxy+%2Bbuds&qclid=EAiaIQobChMIv4aCrIPm6AIV3x-tBh3m1QZ6EAAYASAAEgIYPvD_BwE&gclid=aw.ds)
- [35] [http://downloadcenter.samsung.com/content/MC/202003/20200318123539528/EB/Len/004\\_using-the-earbuds\\_5.html#0](http://downloadcenter.samsung.com/content/MC/202003/20200318123539528/EB/Len/004_using-the-earbuds_5.html#0)

Claim 1	Evidence
<p><b>1[pre].</b> An audio system comprising:</p>	<p>The preamble is non-limiting. To the extent the preamble is determined to be limiting, Samsung Galaxy Buds and Samsung Galaxy Buds+ comprise a set of headphones for removably coupling with a holder body having one or more magnetically attractable first surfaces:</p> <p>Samsung Galaxy Buds comprise headphones for playing audio:</p>  <p>[1]</p> <p>Samsung Galaxy Buds headphones include a charging case with one or more magnetic surfaces:</p>



[1]

### Galaxy Buds: Features

The buds' most iconic feature is their **wireless charging case**. The small, oval container **snaps the Galaxy Buds into place using tiny magnets** and can be placed on any Qi wireless charging mat to juice up. The S10's Wireless PowerShare lets users turn their smartphone into an extra wireless charger so that they can still charge Galaxy Buds on the go.

[2]

I used a paperclip to locate all 15 magnets in the case and buds (excluding the 2 driver magnets in the buds themselves).  
Interesting.  
Uploaded Apr 12



[3]

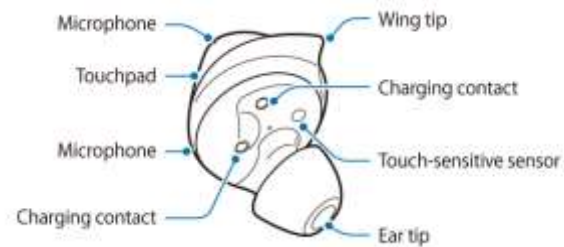


采用多颗磁铁辅助耳机定位。

[23]

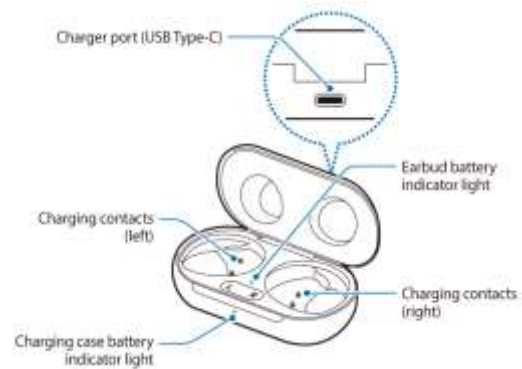
English Translation: Use multiple magnets to assist in headphone positioning

Samsung Galaxy Buds+ comprise earphones for playing audio:



[33]

Samsung Galaxy Buds+ comprise a charging case with one or more magnets:


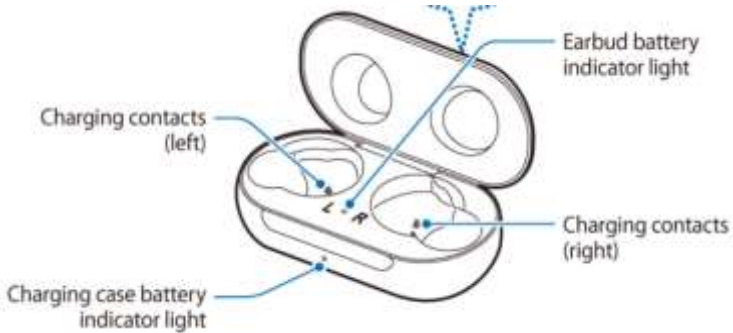


[33]



[32]



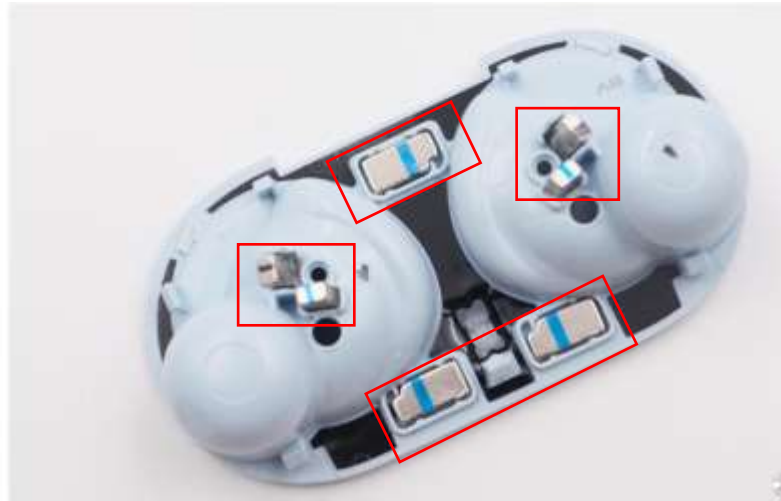
	 <p>[32]</p>
<p><b>1[a]</b> a holder body comprising one or more magnetically attractable first surfaces;</p>	<p>Samsung Galaxy Buds comprise a charging case with one or more magnetically attractable first surfaces:</p>  <p>[1]</p> <p><b>Galaxy Buds: Features</b></p> <p>The buds' most iconic feature is their <b>wireless charging case</b>. The small, oval container <b>snaps the Galaxy Buds into place using tiny magnets</b> and can be placed on any Qi wireless charging mat to juice up. The S10's Wireless PowerShare lets users turn their smartphone into an extra wireless charger so that they can still charge Galaxy Buds on the go.</p> <p>[2]</p>

I used a paperclip to locate all 15 magnets in the case and buds (excluding the 2 driver magnets in the buds themselves).  
Interesting.

Uploaded Apr 12



[3]

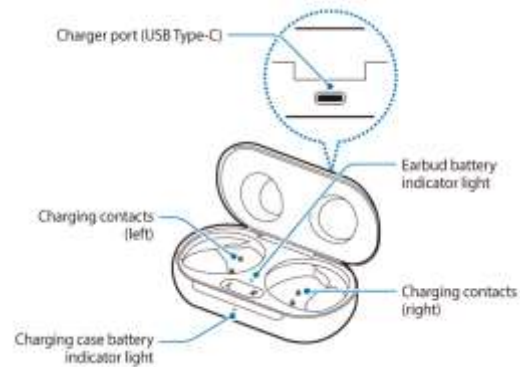


采用多颗磁铁辅助耳机定位。

[23]

English Translation: Use multiple magnets to assist in headphone positioning

Samsung Galaxy Buds+ comprise a charging case with one or more magnetically attractable first surfaces::



[33]



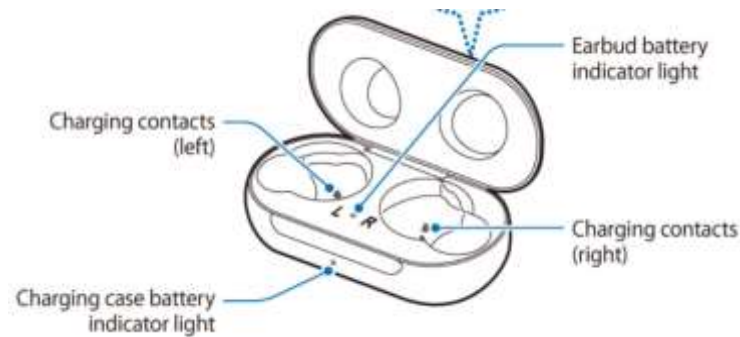
[32]



[32]

**1[b]** a set of head phones each comprising a magnetic second surface for removably coupling with the one or more magnetically attractable first surfaces;

Samsung Galaxy Buds comprise a set of head phones each comprising a magnetic second surface for removably coupling with the one or more magnetically attractable first surfaces:



[1]

#### Galaxy Buds: Features

The buds' most iconic feature is their **wireless charging case**. The small, oval container **snaps the Galaxy Buds into place using tiny magnets** and can be placed on any Qi wireless charging mat to juice up. The S10's Wireless PowerShare lets users turn their smartphone into an extra wireless charger so that they can still charge Galaxy Buds on the go.

[2]

I used a paperclip to locate all 15 magnets in the case and buds (excluding the 2 driver magnets in the buds themselves).  
Interesting.

Uploaded Apr 12

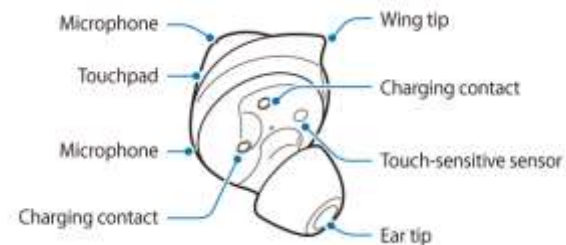


[3]



[23]

Samsung Galaxy Buds+ comprise a set of head phones each comprising a magnetic second surface for removably coupling with the one or more magnetically attractable first surfaces:



[33]

**Your device contains magnets**, which may affect medical devices, such as pacemakers or implantable cardioverter defibrillators. If you are using any of these

medical devices, keep your device a safe distance from them and consult with your physician before you use the device. [33]



[25]

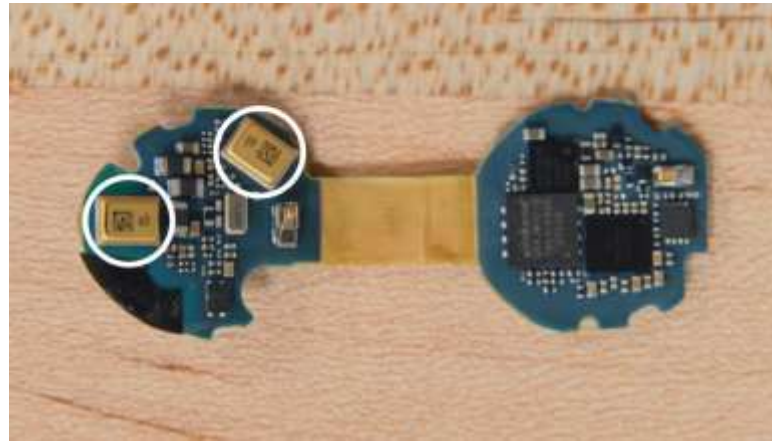


[25]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board



(PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]

**1[c]** a headphones controller coupled to receive an activation signal when a magnetic decoupling is detected as one or more of the magnetic second surfaces of the set of headphones is removed and decoupled from one of the one or more magnetically attractable first surfaces, wherein the activation signal causes transmitted audio to be played in the headphones;

Samsung Galaxy Buds comprise a headphones controller coupled to receive an activation signal when a magnetic decoupling is detected as one or more of the magnetic second surfaces of the set of headphones is removed and decoupled from one of the one or more magnetically attractable first surfaces:

### Broadcom Wireless Audio Chip Powers Samsung Galaxy Buds

Broadcom BCM43014 delivers premium Bluetooth sound and unmatched battery life in ultra-compact footprint

SAN JOSE, Calif., Feb. 28, 2019 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today unveiled the BCM43014 chip enabling the Samsung Galaxy Buds to deliver a premium audio experience. The BCM43014 is a highly-integrated low power SoC that brings together unique innovations in Bluetooth, audio DSP and sensor hub technology to render rich audio while delivering up to six hours of Bluetooth streaming or five hours of voice calls.

[4]

Built on Broadcom's unique combination of deep semiconductor expertise and wireless audio engineering, the BCM43014 is engineered to meet the design requirements for in-ear wireless devices. In addition to Bluetooth 5, the chip is packed with innovative features and capabilities that:

- Allows for seamless integration of advanced acoustic algorithms that reduce background noise to deliver rich sound.
- Delivers synchronized audio to both the earbuds for various daily user scenarios using Broadcom's InConcert® technology to create a truly wireless experience.
- Innovates with a holistic low power system-level design that spans radio design, protocol optimization and software techniques.
- Seamlessly connects both Buds with phone and quickly switches between devices with Broadcom's advanced Bluetooth pairing technology to deliver continuity of content for the consumer.
- Enables the integration of the multi-dimensional sensors behind the convenient and intuitive user interface on the Buds.
- Facilitates slim earbud design by integrating multiple audio components into a single chip and reducing the overall bill of materials.



[4]

Galaxy Buds also comprise an ABOV F6432AUB Micro Controller Unit.

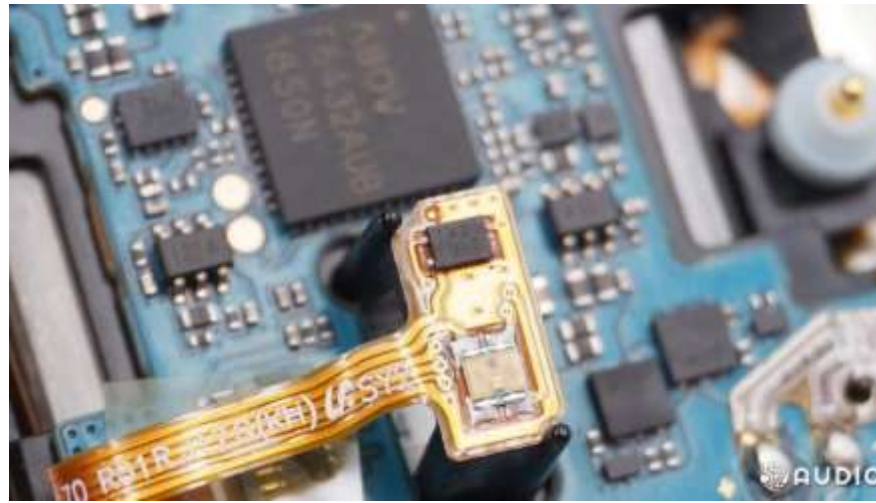


[14]

On information and belief, the ABOV F6432AUB and the controller and/or sensor hub of the BCM43014 System on Chip and are responsive to a magnetic Hall sensor:

	<div><div>Dimensions &amp; Weight</div><div><div></div><div><div>Ear Buds</div><div>17.5 x 22.5 x 19.2mm</div><div>5.6g</div></div></div><div><div></div><div><div>Cradle</div><div>70 x 38.8 x 26.5mm</div><div>39.6g</div></div></div><div>Performance</div><div>AP</div><div>BCM43014</div></div> <div><div>Samsung Galaxy Buds - The Official Samsung Galaxy Site</div><div><div>Sensor</div><div>Accelerometer, Proximity, Hall, Touch</div></div></div>
--	---

[5]



[14]

On information and belief, Galaxy Buds are compatible with Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e.

#### Compatibility

Samsung, other Android: Android 5.0 or higher & RAM 1.5GB above

[5]

# Quick pairing out of the box

Just pop open and pair. Galaxy Buds work right out of the box, connecting with your Galaxy devices in an instant via Bluetooth to get you up to the beat and well on your way. <sup>1,2,3</sup>

[6]

On information and belief, Galaxy Buds are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

## **Android & iOS compatible**

The Galaxy Buds pair with both  
Android and iOS compatible  
smartphones via Bluetooth  
connection.<sup>4</sup>

[7]

When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds earphones activate and begin playing audio when removed from the charging case.



[15]

Galaxy Buds automatically connects to the user's smartphone when the case is open and disconnects when placed back in the case. With a simple touch on the surface of an earbud, users can play or pause the current song, or move onto the previous or next song. Users can even give orders or turn on and off certain features using voice command.

[15]

Also, Samsung Galaxy buds detect if one or more earbuds are decoupled from one or more of the magnetically attractable surfaces attached to the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnetically attractable surfaces attached to the holder body, the audio stops.

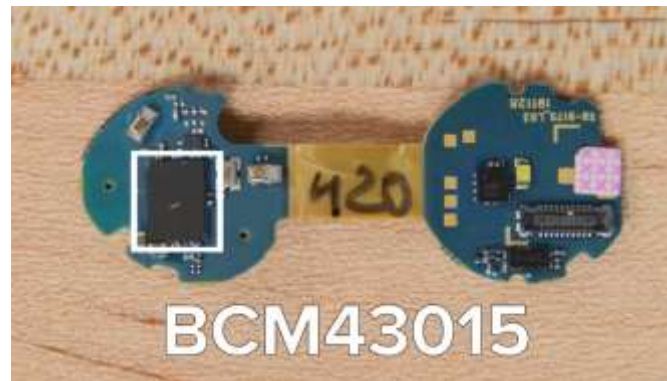
The **Galaxy Buds** will detect how many earbuds are in its case and will switch the sound output to mono or stereo based on how many earbuds are in the charging case. If you put both **Galaxy Buds** into the charging case, the music will stop automatically.



[24]

The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds earphones are deactivated and cannot play audio when in the holder.

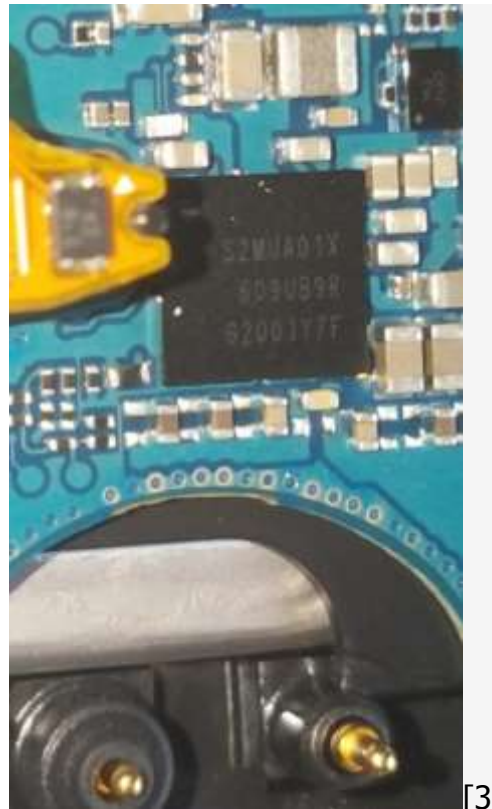
Samsung Galaxy Buds+ comprise a headphones controller coupled to receive an activation signal when a magnetic decoupling is detected as one or more of the magnetic second surfaces of the set of headphones is removed and decoupled from one of the one or more magnetically attractable first surfaces:



[25]



Galaxy Buds+ also include Samsung S2MUA01X chips. On information and belief, the S2MUA01X chips include a controller unit.



[32]

On information and belief, BCM43015 System on Chip includes a control unit and a sensor hub. On information and belief, the Samsung S2MUA01X chips and the control unit and/or sensor hub of the BCM43015 System on Chip are responsive to a magnetic Hall sensor:

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]

Samsung | Samsung Galaxy Buds+  
samsung.com/global/galaxy/galaxy-buds-plus/specs

**SAMSUNG** Galaxy Buds+  
GALAXY BUDS+ AUDIO BATTERY DESIGN CONVENIENCE ECOSYSTEM COMPARE SPECS

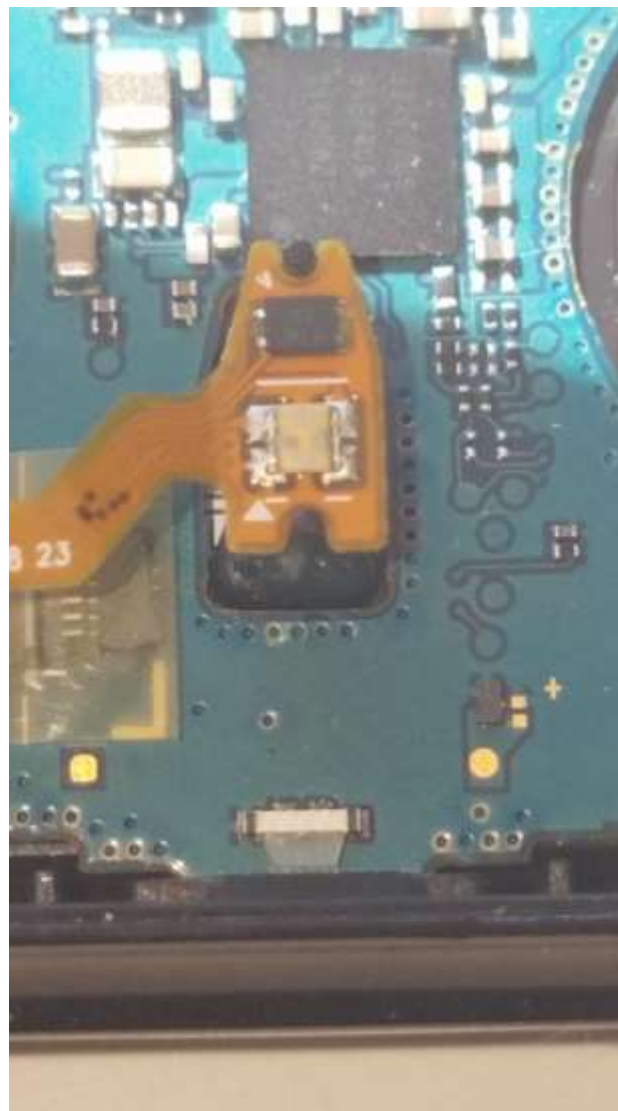
Links: Samsung Samsung proprietary, etc. etc.

**Battery** 65min 270mAh

**Sensor** Accelerometer, IR, Hall, Touch

**Compatibility** Samsung, other Android: Android 5.0 or higher & RAM 1.5GB above

[31]



[32]

Also, Samsung Galaxy Buds+ detect if one or more earbuds are decoupled from one or more of the magnets comprising the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnets comprising the holder body, the audio stops.

The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds+ earphones are deactivated and cannot play audio when in the holder.

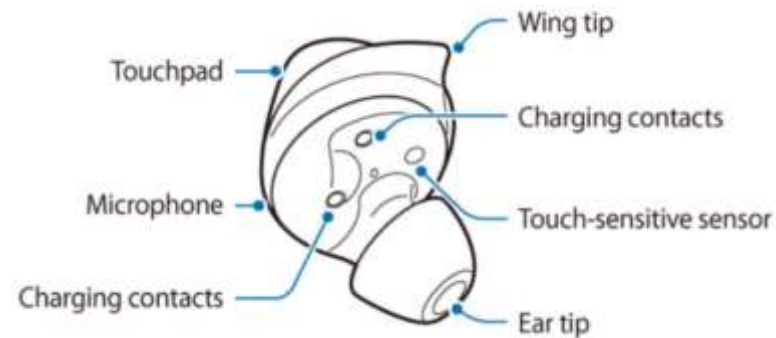
Galaxy Buds+ are compatible with smartphones and tablets running Android 5.0 or higher, including without limitation Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, Galaxy S10e, S20, S20+ and S20 Ultra 5G.

In addition, Galaxy Buds+ are compatible with iPhone7 or later models with iOS10 or higher.

<sup>10</sup> Compatible with smartphones and tablet running Android 5.0 or higher and with more than 1.5GB of RAM. Also compatible with iPhone7 or later models with the iOS 10 or higher. [34]

**1[d]** a first set of controls for controlling a volume of the transmitted audio played by the head phones; and

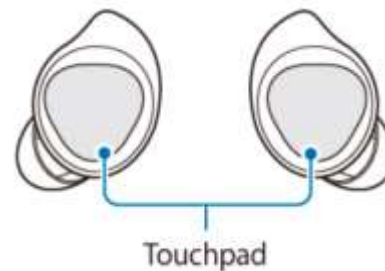
Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input for controlling a volume of the transmitted audio played by the headphones:



[1]

### Using the touchpad

You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.



[1]

### Tap and hold

- Activate a preset feature. [1]

#### Setting a preset tap-and-hold feature

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command**: Start a conversation with Bixby.
  - **Quick ambient sound**: Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up**: Adjust the volume.

[1]

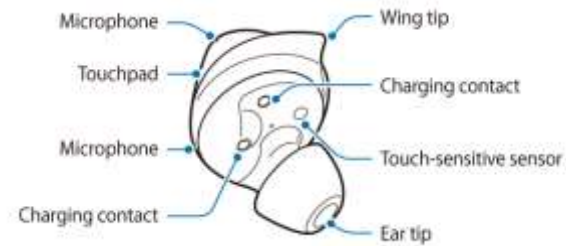
#### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

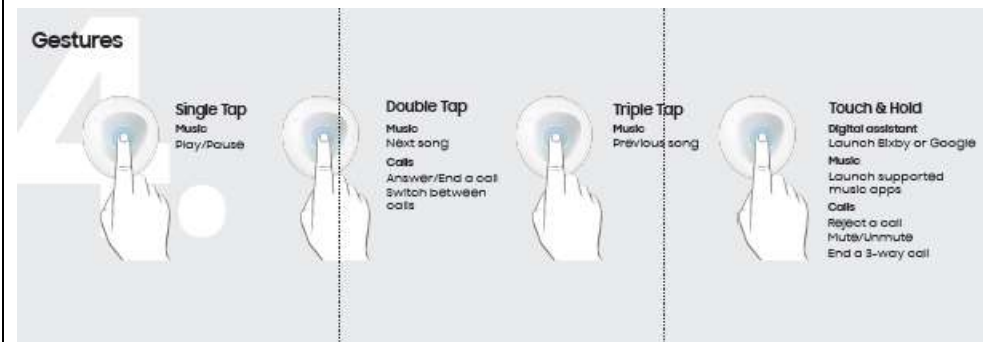
[16]

Moreover, Samsung Galaxy Buds allow control of volume through controls on a connected device.

Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input for controlling a volume of the transmitted audio played by the headphones:

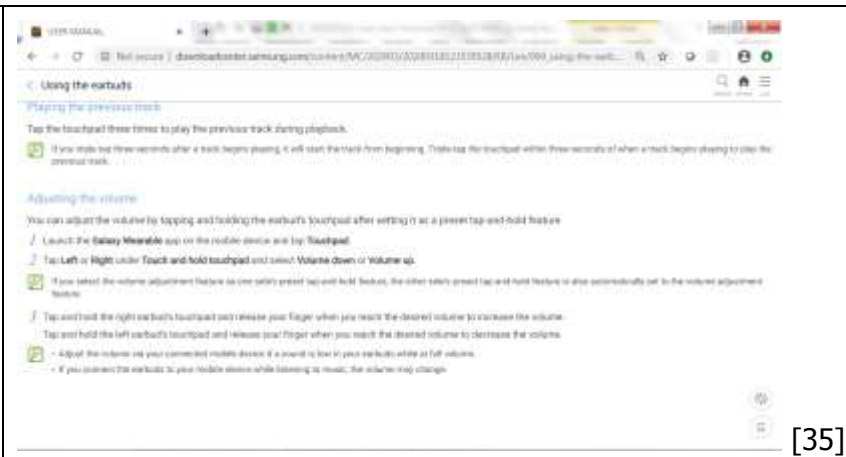


[33]



[30]

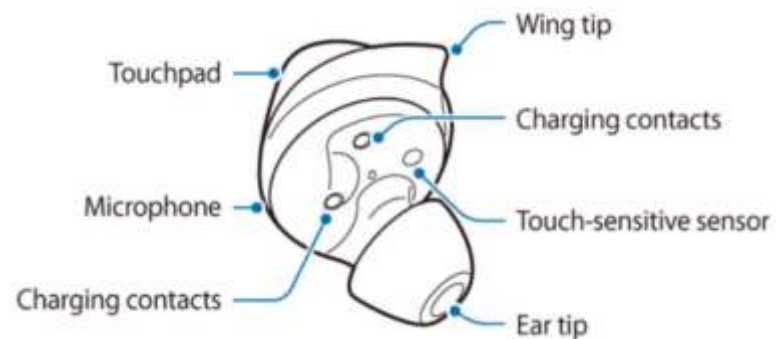




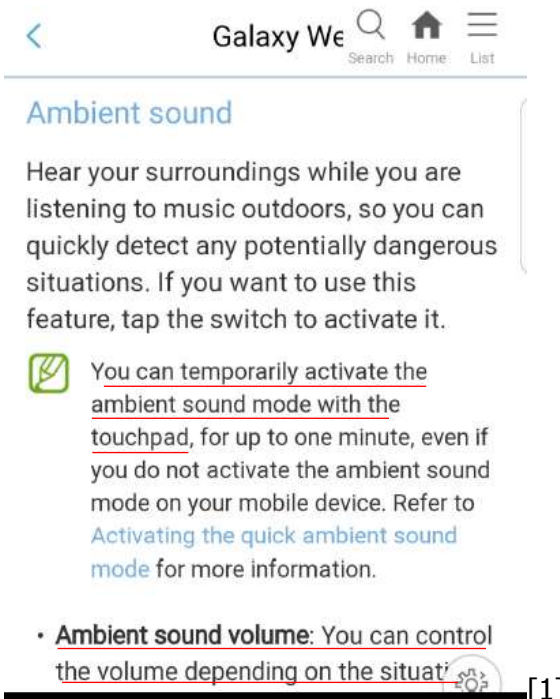


Moreover, Samsung Galaxy Buds+ allow control of volume through controls on a connected device.

**1[e]** a second set of controls for controlling a volume of external audio played by the headphones.

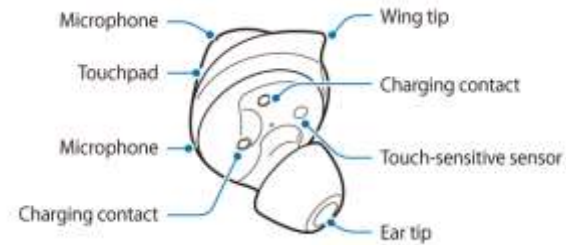
Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



[1]

	 <p><b>Ambient sound</b></p> <p>Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations. If you want to use this feature, tap the switch to activate it.</p> <p> You can temporarily activate the ambient sound mode with the touchpad, for up to one minute, even if you do not activate the ambient sound mode on your mobile device. Refer to <a href="#">Activating the quick ambient sound mode</a> for more information.</p> <ul style="list-style-type: none"> <li>• <b>Ambient sound volume:</b> You can control the volume depending on the situation  [1]</li> </ul> <p>"Samsung insists that the Galaxy Buds are for talking just as much as they are for listening. Thanks to so-called 'dual adaptive microphones,' one on the inside and one on the outside of each earbud, the company says the person on the other end of your calls will hear you more clearly. That's because the earbuds can pick up on your surroundings and automatically switch between the two sets of mics to reduce background noise for whoever you're talking to." [8]</p> <p>Moreover, Samsung Galaxy Buds allow control of volume of ambient noise through controls on a connected device.</p>
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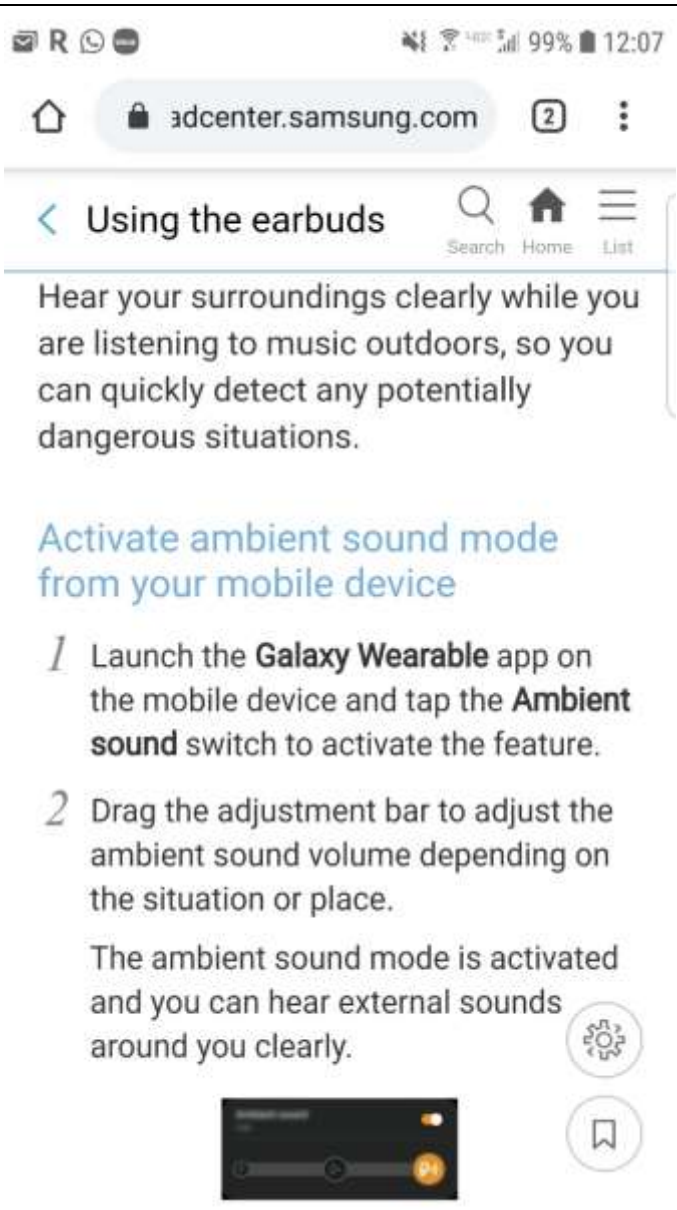
Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



[33]



[35]



The screenshot shows a mobile app interface for Samsung. At the top, the status bar displays various icons and the time 12:07. Below the status bar is a navigation bar with a home icon, a search icon, and a list icon. The main content area is titled "Using the earbuds" and contains the following text:

Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

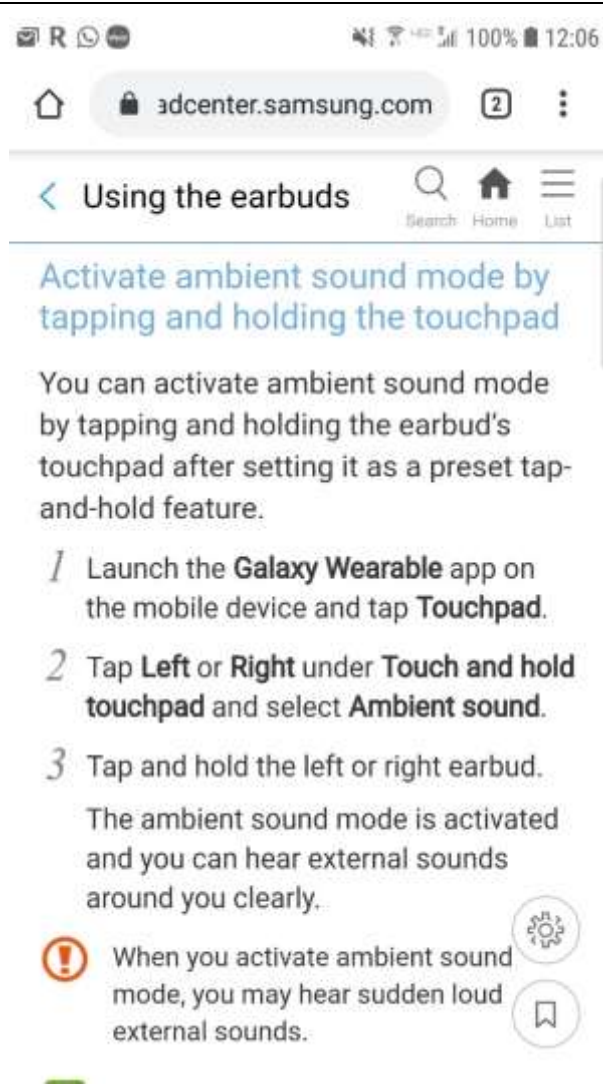
**Activate ambient sound mode from your mobile device**

- 1 Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature.
- 2 Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place.

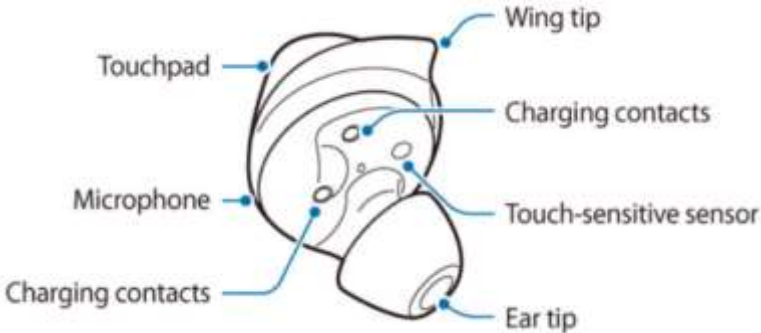
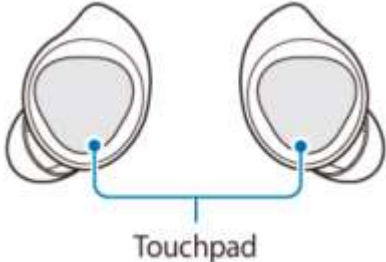
The ambient sound mode is activated and you can hear external sounds around you clearly.

Below the text, there is a small image of the ambient sound mode interface, which shows a slider and a play button. To the right of the text, there are two circular icons: a gear icon and a bookmark icon.

[35]



Moreover, Samsung Galaxy Buds+ allow control of volume of ambient noise through controls on a connected device.

Claim 2	Evidence
<p><b>2.</b> The audio system of claim 1, wherein the first set of controls and the second set of controls comprise touch sensitive controls.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving a user input:</p>  <p>[1]</p> <p><b>Using the touchpad</b></p> <p>You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.</p>  <p>[1]</p> <p><b><u>Tap and hold</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>Activate a preset feature.</u></b> [1]</li> </ul>

#### Setting a preset tap-and-hold feature

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command**: Start a conversation with Bixby.
  - **Quick ambient sound**: Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up**: Adjust the volume.

[1]

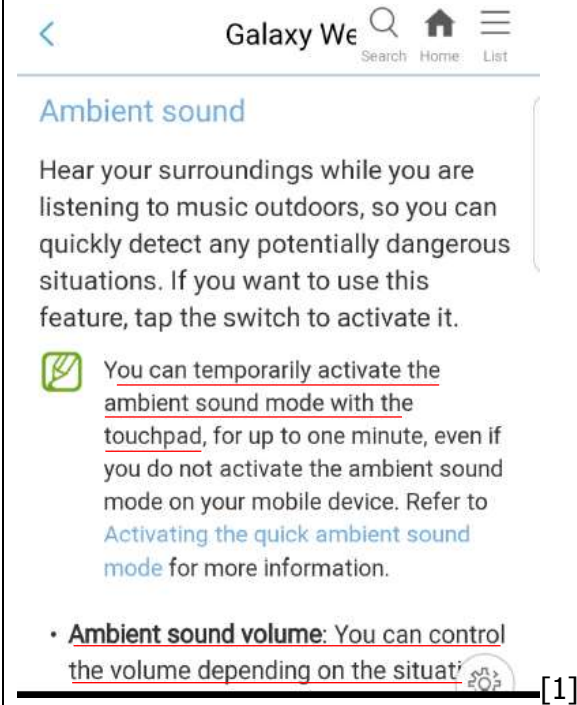
#### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

[16]

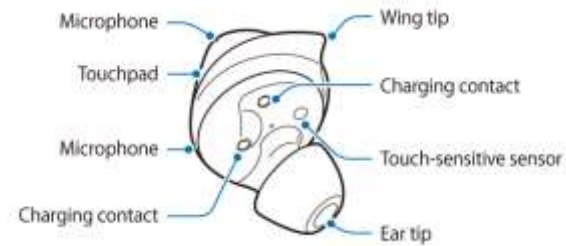


Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

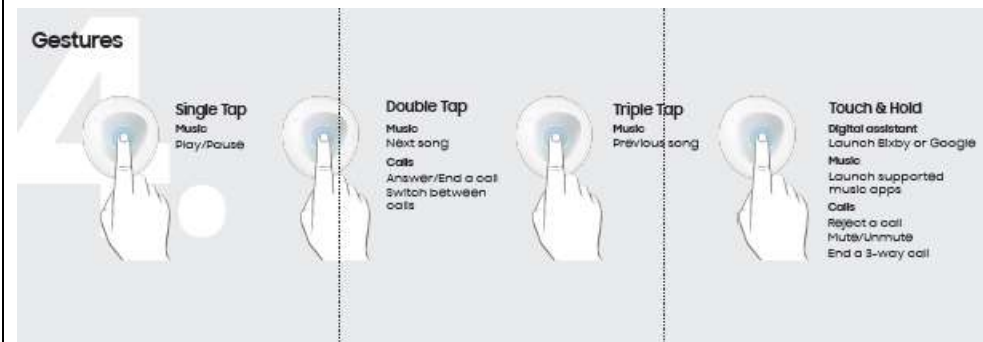


Moreover, Samsung Galaxy Buds allow control of volume through touch sensitive controls on a connected device.

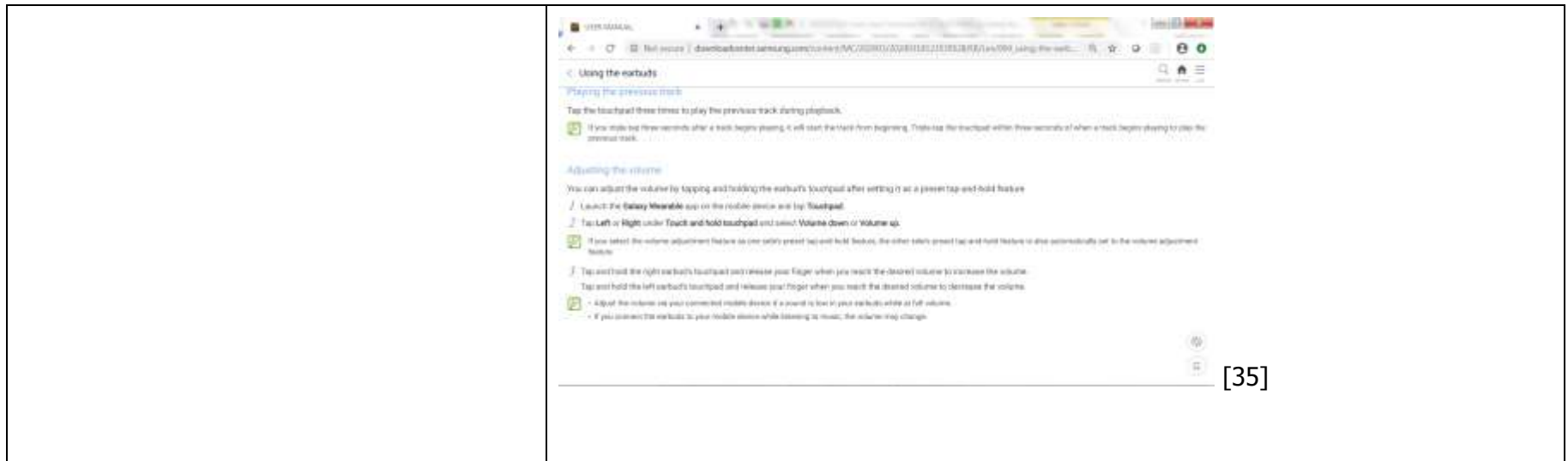
Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving a user input:

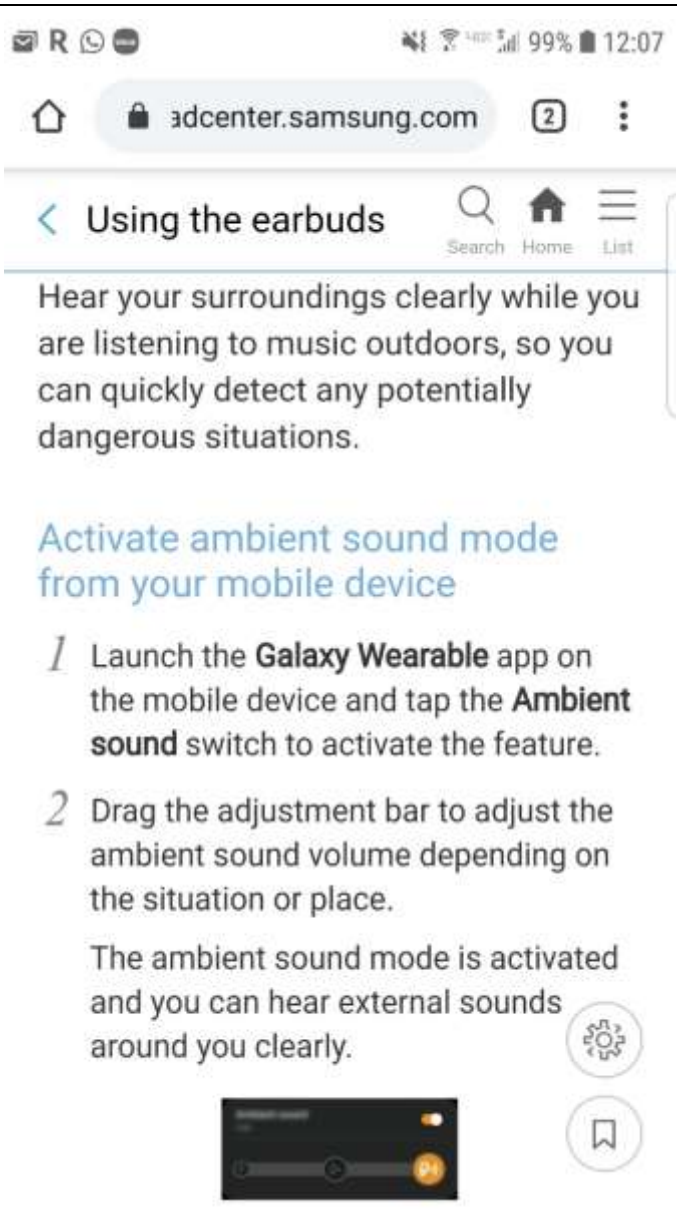


[33]



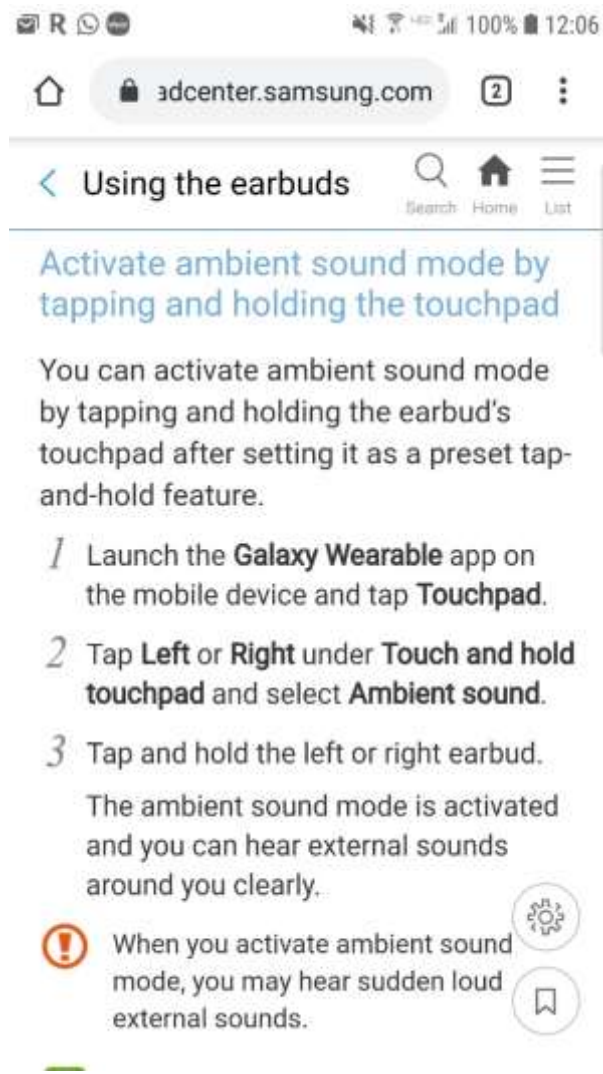
[30]





The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows the URL [adcenter.samsung.com](http://adcenter.samsung.com). Below the address bar is a navigation bar with a back arrow, the title "Using the earbuds", and icons for search, home, and a list. The main content area has a heading "Using the earbuds" followed by a paragraph: "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." Below this is a section titled "Activate ambient sound mode from your mobile device" in blue. It contains two numbered steps: 1. "Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature." 2. "Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place." Below the steps, it says "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom left, there is a small image of a mobile screen showing a slider control. To the right of the text, there are two circular icons: a gear (settings) and a bookmark.

[35]



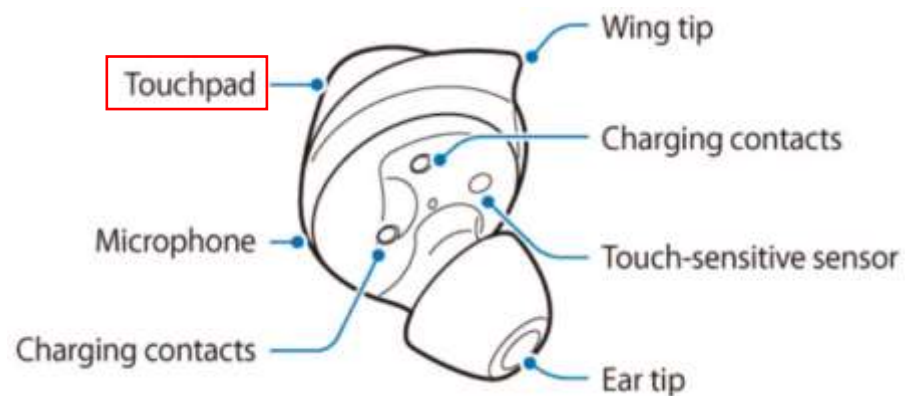
Moreover, Samsung Galaxy Buds+ allow control of volume through touch sensitive controls on a connected device.

Claim 3	Evidence
<p><b>3.</b> The audio system of claim 1, wherein the headphones controller, the first set of controls and the second set of controls are a component of the headphones.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with a headphones controller, a first set of controls and a second set of controls:</p> <p><b>Broadcom Wireless Audio Chip Powers Samsung Galaxy Buds</b></p> <p>Broadcom BCM43014 delivers premium Bluetooth sound and unmatched battery life in ultra-compact footprint</p> <p>SAN JOSE, Calif., Feb. 28, 2019 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today unveiled the BCM43014 chip enabling the Samsung Galaxy Buds to deliver a premium audio experience. The BCM43014 is a highly-integrated low power SoC that brings together unique innovations in Bluetooth, audio DSP and sensor hub technology to render rich audio while delivering up to six hours of Bluetooth streaming or five hours of voice calls.</p> <p>[4]</p>

Built on Broadcom's unique combination of deep semiconductor expertise and wireless audio engineering, the BCM43014 is engineered to meet the design requirements for in-ear wireless devices. In addition to Bluetooth 5, the chip is packed with innovative features and capabilities that:

- Allows for seamless integration of advanced acoustic algorithms that reduce background noise to deliver rich sound.
- Delivers synchronized audio to both the earbuds for various daily user scenarios using Broadcom's InConcert® technology to create a truly wireless experience.
- Innovates with a holistic low power system-level design that spans radio design, protocol optimization and software techniques.
- Seamlessly connects both Buds with phone and quickly switches between devices with Broadcom's advanced Bluetooth pairing technology to deliver continuity of content for the consumer.
- Enables the integration of the multi-dimensional sensors behind the convenient and intuitive user interface on the Buds.
- Facilitates slim earbud design by integrating multiple audio components into a single chip and reducing the overall bill of materials.

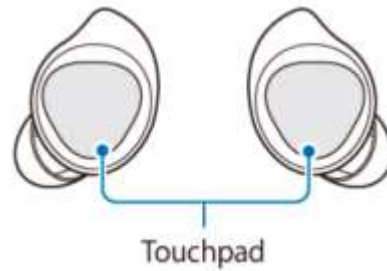
[4]



[1]

### Using the touchpad

You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.



[1]

### **Tap and hold**

- **Activate a preset feature.** [1]

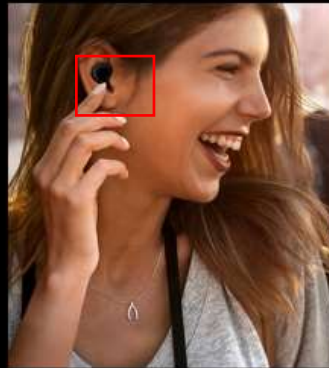
#### **Setting a preset tap-and-hold feature**

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command:** Start a conversation with Bixby.
  - **Quick ambient sound:** Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up:** Adjust the volume.

[1]

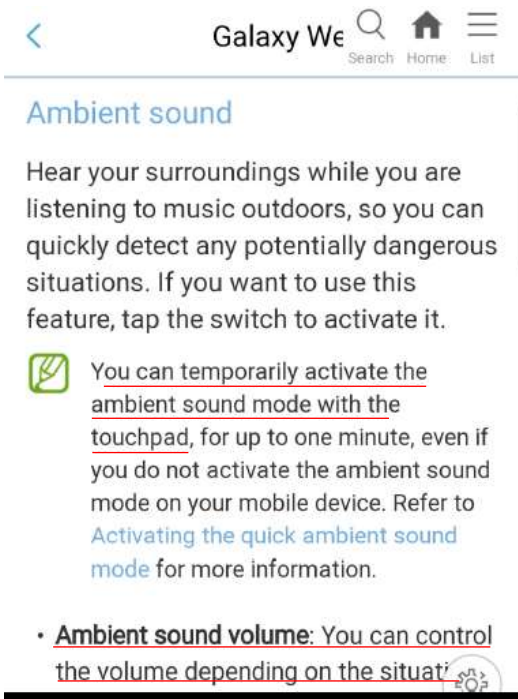




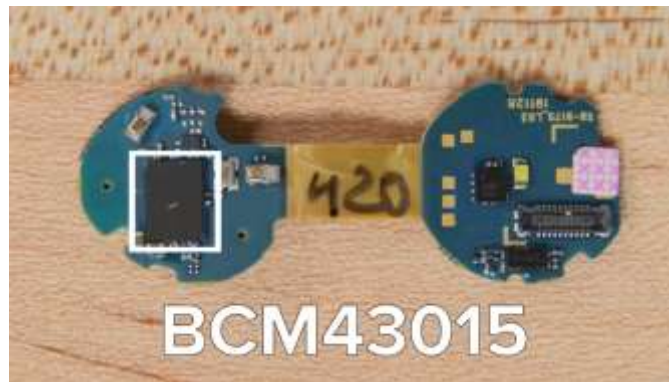


### Control with a touch

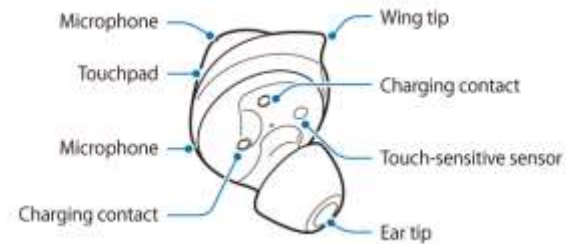
Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

[16]

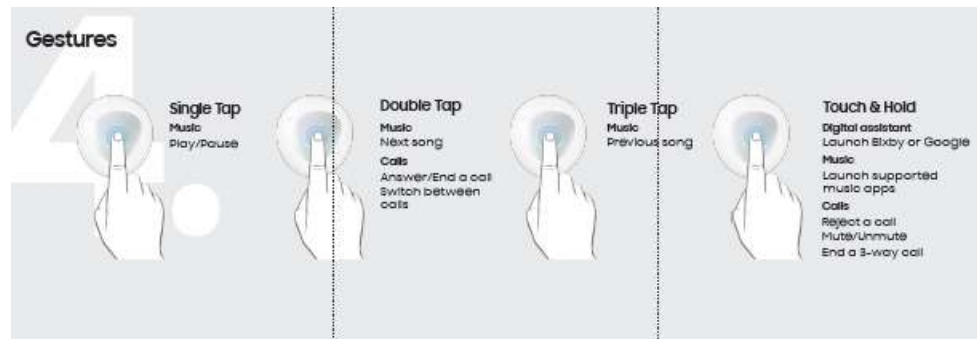
	 <p><b>Ambient sound</b></p> <p>Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations. If you want to use this feature, tap the switch to activate it.</p> <p> You can temporarily activate the ambient sound mode with the touchpad, for up to one minute, even if you do not activate the ambient sound mode on your mobile device. Refer to <a href="#">Activating the quick ambient sound mode</a> for more information.</p> <ul style="list-style-type: none"> <li>• <b>Ambient sound volume:</b> You can control the volume depending on the situation  [1]</li> </ul> <p>Samsung Galaxy Buds+ comprise a set of headphones with a headphones controller, a first set of controls and a second set of controls:</p>
--	--



[25]

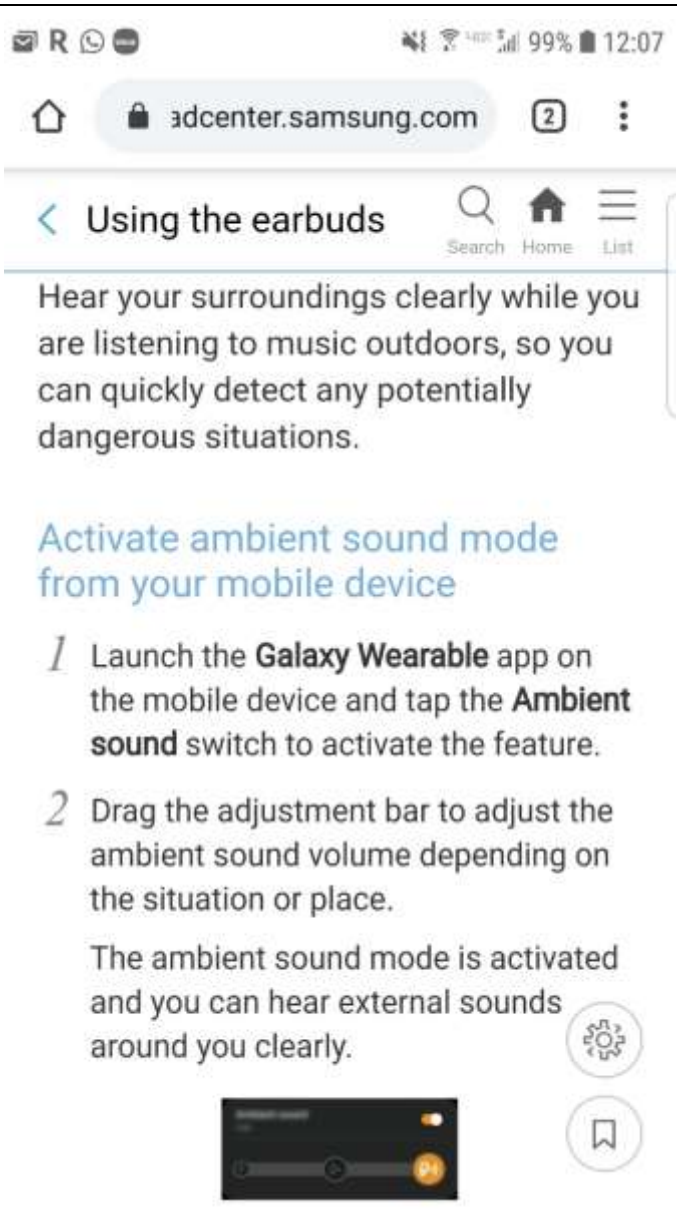


[33]



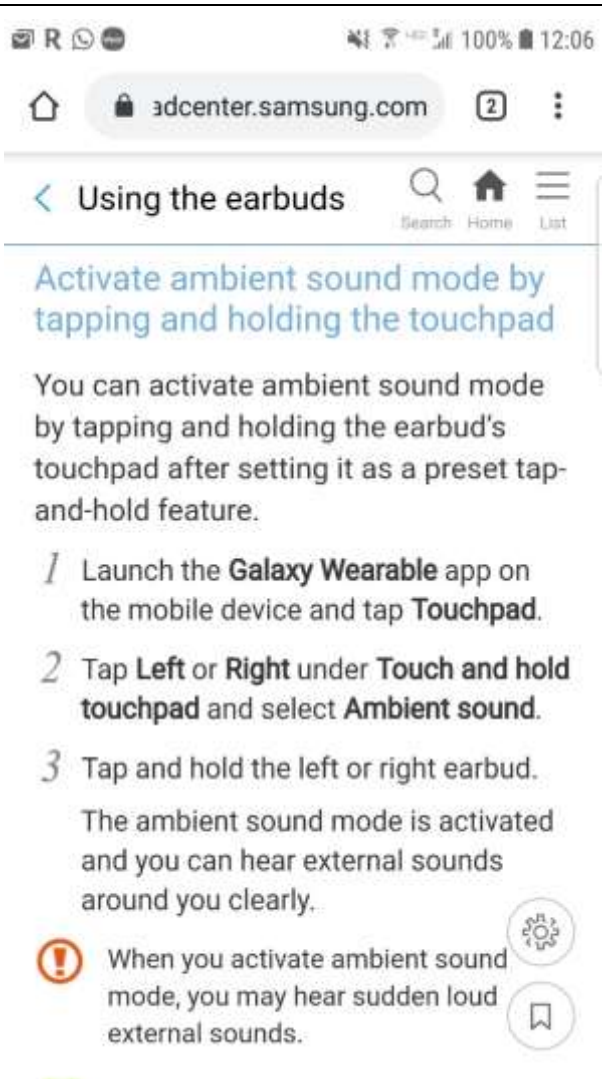
[30]





The screenshot shows a mobile app interface for Samsung. At the top, the status bar displays icons for mail, R, clock, and battery, along with signal strength, Wi-Fi, and 99% battery at 12:07. Below the status bar is a navigation bar with a home icon, a lock icon, and the URL "adcenter.samsung.com". The main content area has a title "Using the earbuds" with a back arrow, a search icon, a home icon, and a list icon. The text reads: "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." Below this is a section titled "Activate ambient sound mode from your mobile device". It contains two numbered steps: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the steps, it says: "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom, there is a small image of a smartphone screen showing a slider control for ambient sound volume, and two circular icons: a gear (settings) and a bookmark.

[35]



The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The browser address bar shows 'adcenter.samsung.com' with a lock icon and a tab indicator showing '2'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list menu. The main content area has a heading 'Activate ambient sound mode by tapping and holding the touchpad' in blue. Below this, a paragraph states: 'You can activate ambient sound mode by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature.' This is followed by a numbered list of three steps: 1. Launch the **Galaxy Wearable** app on the mobile device and tap **Touchpad**. 2. Tap **Left** or **Right** under **Touch and hold touchpad** and select **Ambient sound**. 3. Tap and hold the left or right earbud. Below the list, a paragraph says: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' To the right of this paragraph are two circular icons: a gear (settings) and a bookmark. An orange warning icon (exclamation mark in a circle) is positioned to the left of a paragraph that reads: 'When you activate ambient sound mode, you may hear sudden loud external sounds.' At the bottom right of the page, the text '[35]' is visible.

Using the earbuds

Activate ambient sound mode by tapping and holding the touchpad

You can activate ambient sound mode by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature.

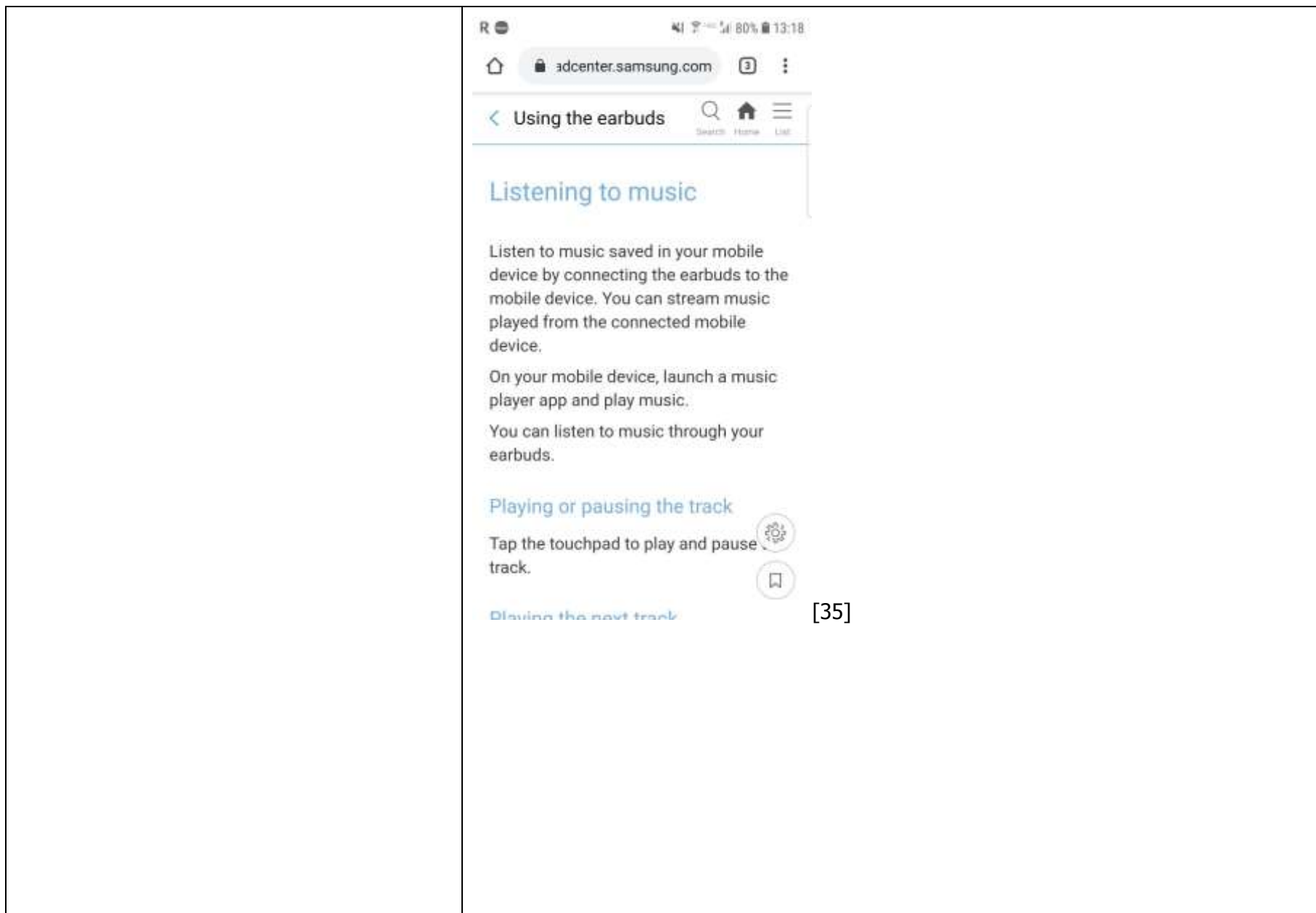
- 1 Launch the **Galaxy Wearable** app on the mobile device and tap **Touchpad**.
- 2 Tap **Left** or **Right** under **Touch and hold touchpad** and select **Ambient sound**.
- 3 Tap and hold the left or right earbud.

The ambient sound mode is activated and you can hear external sounds around you clearly.

When you activate ambient sound mode, you may hear sudden loud external sounds.

[35]

Claim 5	Evidence
<p><b>5.</b> The audio system of claim 1, wherein the transmitted audio comprises audio received from an electronic device.</p>	<p>Samsung Galaxy Buds comprise a set of headphones for playing audio received from the electronic device:</p> <p><b>Perfectly paired</b></p> <p><u>Pair Samsung Galaxy Buds with your phone or tablet and go. Listen and chat during the day, then wirelessly recharge for 15 minutes to get up to 1.7 more hours of play time. With sound by AKG, Galaxy Buds deliver calls, your favorite podcasts and the music you love while keeping you aware of your surroundings when walking, working or working out.</u></p> <p>[16]</p> <p>Samsung Galaxy Buds+ comprise a set of headphones for playing audio received from the electronic device:</p>



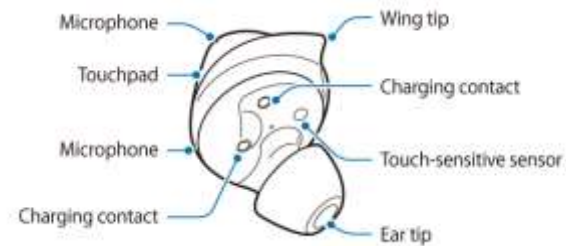


Claim 6	Evidence
<p><b>6.</b> The audio system of claim 1, wherein the external audio comprises surrounding ambient noise received from an external microphone.</p>	<p>Samsung Galaxy Buds comprise an external microphone for receiving external audio comprising surrounding ambient noise:</p> <p><b>Adaptive Dual Microphone</b></p> <p>Galaxy Buds' noise-canceling capability extends beyond the listening experience. Featuring an Adaptive Dual Microphone, the wireless earbuds also minimize external noise in phone conversations.</p> <p>The Adaptive Dual Microphone combines signals from an inner and outer microphone. <u>While the outer receiver detects audio in the surrounding area, the inner microphone picks up vibrations resonating inside the body.</u> By processing and mixing the two sources, the Adaptive Dual Microphone produces an accurate representation of the user's voice. The microphones are further enhanced by SolomonVoice technology and Wind Noise Reduction capability to help Galaxy Buds deliver the user's voice clearly.</p> <p>[17]</p> <div data-bbox="837 709 1703 933"> </div> <p>[17]</p>



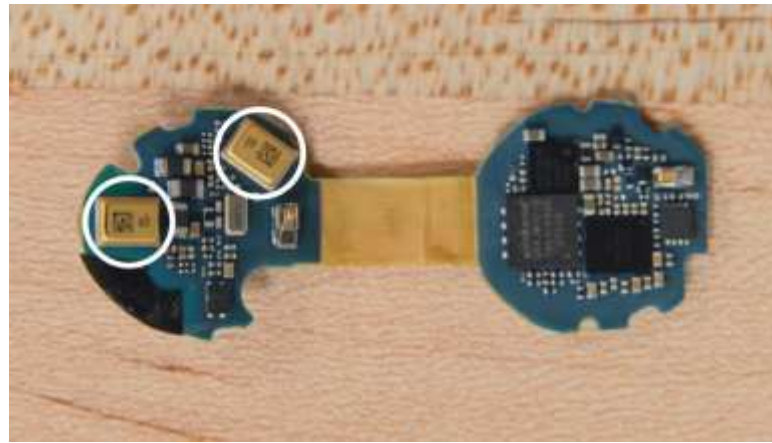
[17]

Samsung Galaxy Buds+ comprise an external microphone for receiving external audio comprising surrounding ambient noise:

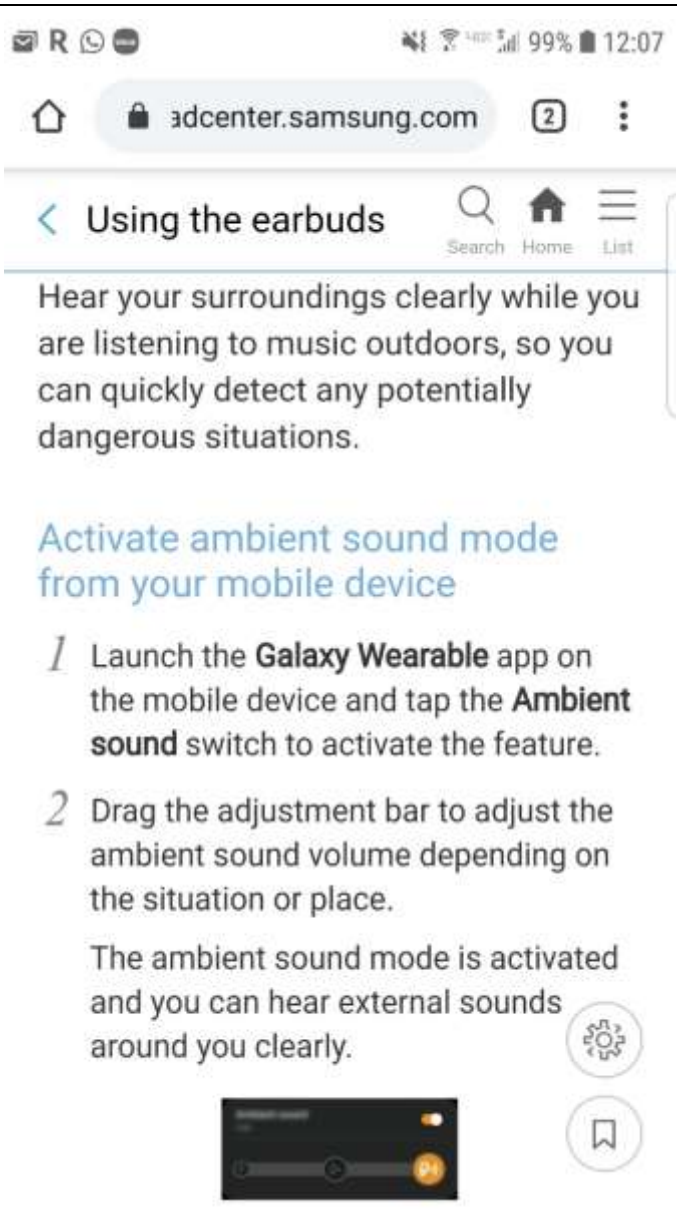


[33]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]



The screenshot displays the Samsung adcenter.samsung.com mobile app interface. At the top, the status bar shows various icons and a 99% battery level at 12:07. The browser address bar indicates the URL adcenter.samsung.com. The app's navigation bar includes a back arrow, the title "Using the earbuds", and icons for search, home, and a list. The main content area features a paragraph about hearing surroundings clearly, followed by a blue heading "Activate ambient sound mode from your mobile device". Below this, two numbered steps are listed: 1. Launch the **Galaxy Wearable** app and tap the **Ambient sound** switch. 2. Drag the adjustment bar to adjust the ambient sound volume. A paragraph states that the ambient sound mode is activated and external sounds are audible. At the bottom, there is a small image of the ambient sound mode slider and two circular icons: a gear for settings and a bookmark.

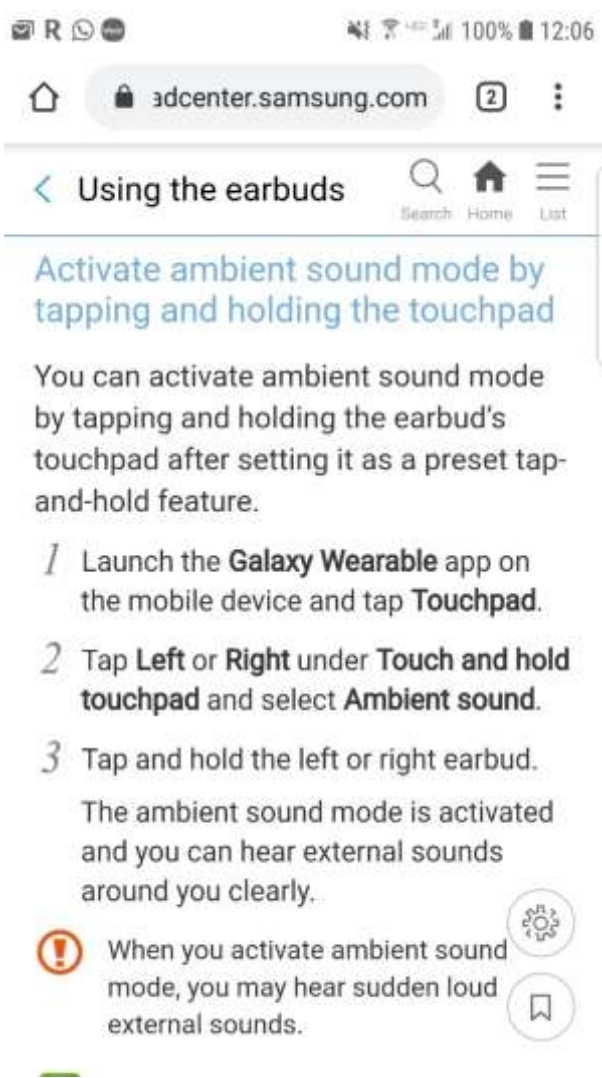
Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

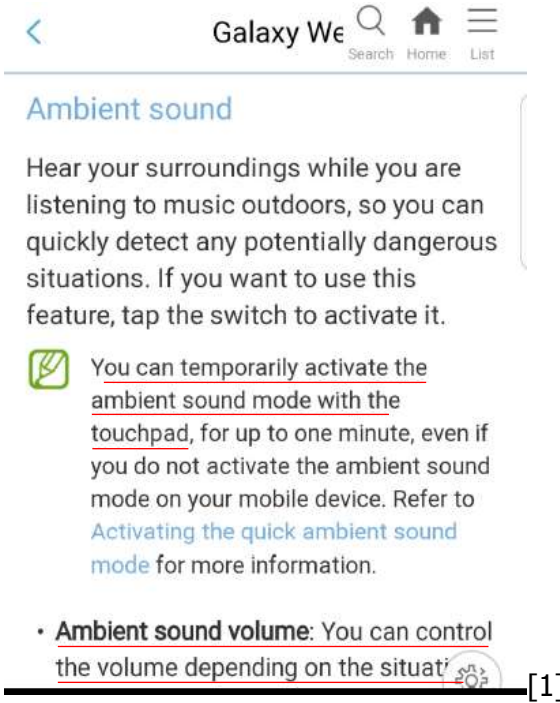
**Activate ambient sound mode from your mobile device**

- 1 Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature.
- 2 Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place.

The ambient sound mode is activated and you can hear external sounds around you clearly.

[35]

	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The browser address bar shows 'sdcenter.samsung.com' with a lock icon and a tab indicator showing '2'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list menu. The main content area has a blue header 'Activate ambient sound mode by tapping and holding the touchpad'. Below this, a paragraph states: 'You can activate ambient sound mode by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature.' A numbered list follows: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap <b>Touchpad</b>. 2. Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b> and select <b>Ambient sound</b>. 3. Tap and hold the left or right earbud. Below the list, a paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' An orange warning icon is followed by the text: 'When you activate ambient sound mode, you may hear sudden loud external sounds.' To the right of the text are two circular icons: a gear (settings) and a bookmark. A green horizontal line is at the bottom left of the content area.</p> <p>[35]</p>
--	--

Claim 7	Evidence
<p><b>7.</b> The audio system of claim 6, wherein the second set of controls control the volume level of ambient noise received through the headphones.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:</p>  <p>The screenshot shows the 'Ambient sound' settings page in the Samsung Galaxy Wearable app. The page title is 'Ambient sound'. The text describes the feature: 'Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations. If you want to use this feature, tap the switch to activate it.' Below this is a tip icon (a green square with a white checkmark) and a text block: 'You can temporarily activate the ambient sound mode with the touchpad, for up to one minute, even if you do not activate the ambient sound mode on your mobile device. Refer to <a href="#">Activating the quick ambient sound mode</a> for more information.' At the bottom, there is a bullet point: '• <u>Ambient sound volume:</u> You can control the volume depending on the situation'. A red circle highlights the text 'the volume depending on the situation' and a small gear icon. A thick black horizontal line is drawn under the bullet point text, followed by a bracketed '[1]'.</p>

## Adaptive Dual Microphone

Galaxy Bud's Adaptive Dual Microphone mixes audio from an inner and outer microphone to produce clear voice calls.

[17]

### STEP 01

Outer microphone detects ambient noise

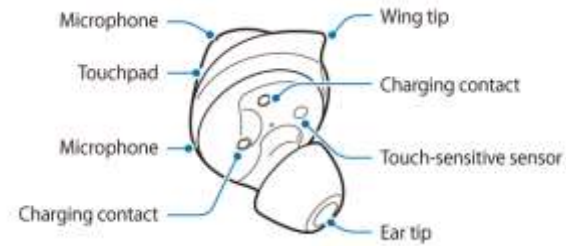
In low-level noise environment, Galaxy Buds use the outer microphone to pick up audio.



[17]

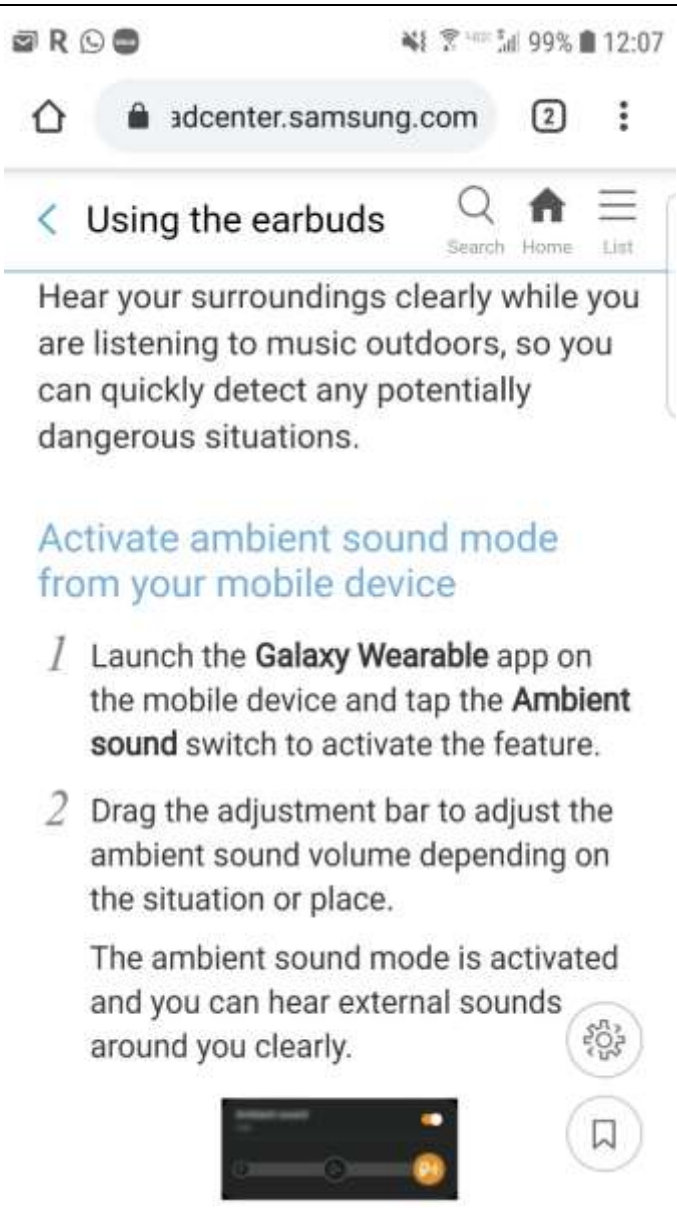
Moreover, Samsung Galaxy Buds allow control of volume of ambient noise through controls on a connected device.

Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



[33]





The screenshot shows a mobile application interface for Samsung. At the top, the status bar displays various icons and the time 12:07. Below the status bar is a navigation bar with a home icon, a search icon, and a list icon. The main content area is titled "Using the earbuds" and contains a paragraph of text: "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." Below this text is a section titled "Activate ambient sound mode from your mobile device" in blue. This section contains two numbered steps: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the steps is a paragraph: "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom of the screen, there is a small image of a mobile device showing the ambient sound mode settings, and two circular icons: a gear icon and a bookmark icon.

adcenter.samsung.com

< Using the earbuds

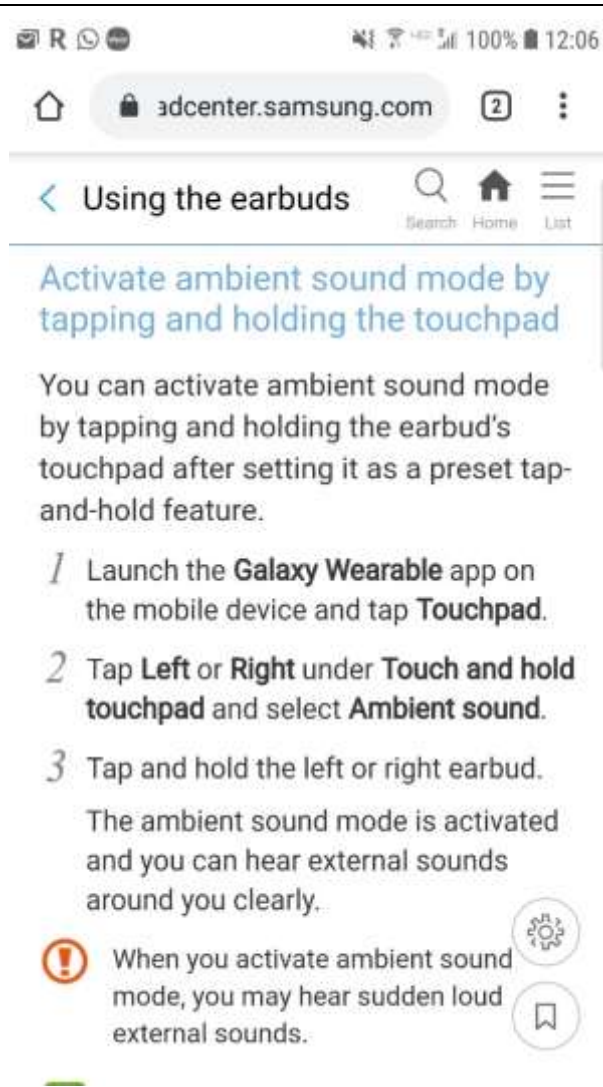
Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

Activate ambient sound mode from your mobile device

- 1 Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature.
- 2 Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place.


The ambient sound mode is activated and you can hear external sounds around you clearly.

[35]



[35]

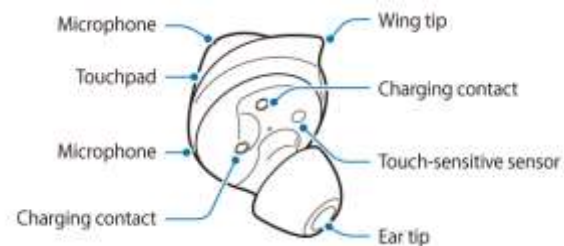
Moreover, Samsung Galaxy Buds+ allow control of volume of ambient noise through controls on a connected device.

Claim 8	Evidence
<p><b>8.</b> The audio system of claim 1, wherein the audio system comprises a noise-canceling element.</p>	<p>Samsung Galaxy Buds comprise a set of headphones having an adaptive dual Microphone comprising noise-canceling element:</p> <p><b>Adaptive Dual Microphone</b></p> <p><u>Galaxy Buds' noise-canceling capability extends beyond the listening experience. Featuring an Adaptive Dual Microphone, the wireless earbuds also minimize external noise in phone conversations.</u></p> <p>The Adaptive Dual Microphone combines signals from an inner and outer microphone. While the outer receiver detects audio in the surrounding area, the inner microphone picks up vibrations resonating inside the body. By processing and mixing the two sources, the Adaptive Dual Microphone produces an accurate representation of the user's voice. The microphones are further enhanced by SolomonVoice technology and Wind Noise Reduction capability to help Galaxy Buds deliver the user's voice clearly.</p> <p>[17]</p> <div data-bbox="837 716 1703 940">  </div> <p>[17]</p>



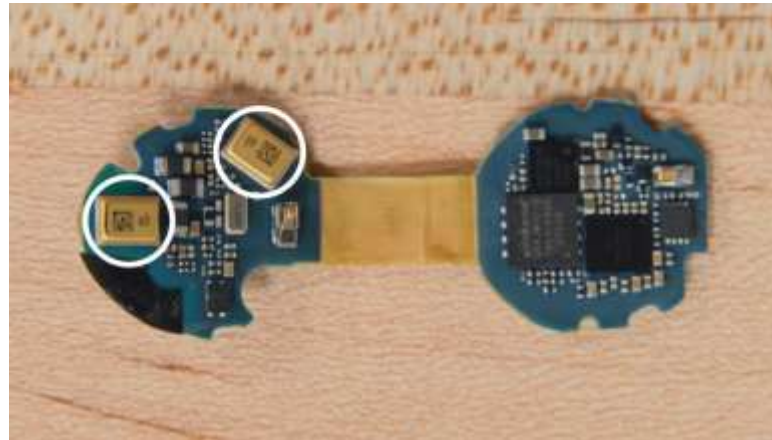
[17]

On information and belief, Samsung Galaxy Buds+ comprise a set of headphones having an adaptive dual microphone comprising noise-canceling element:

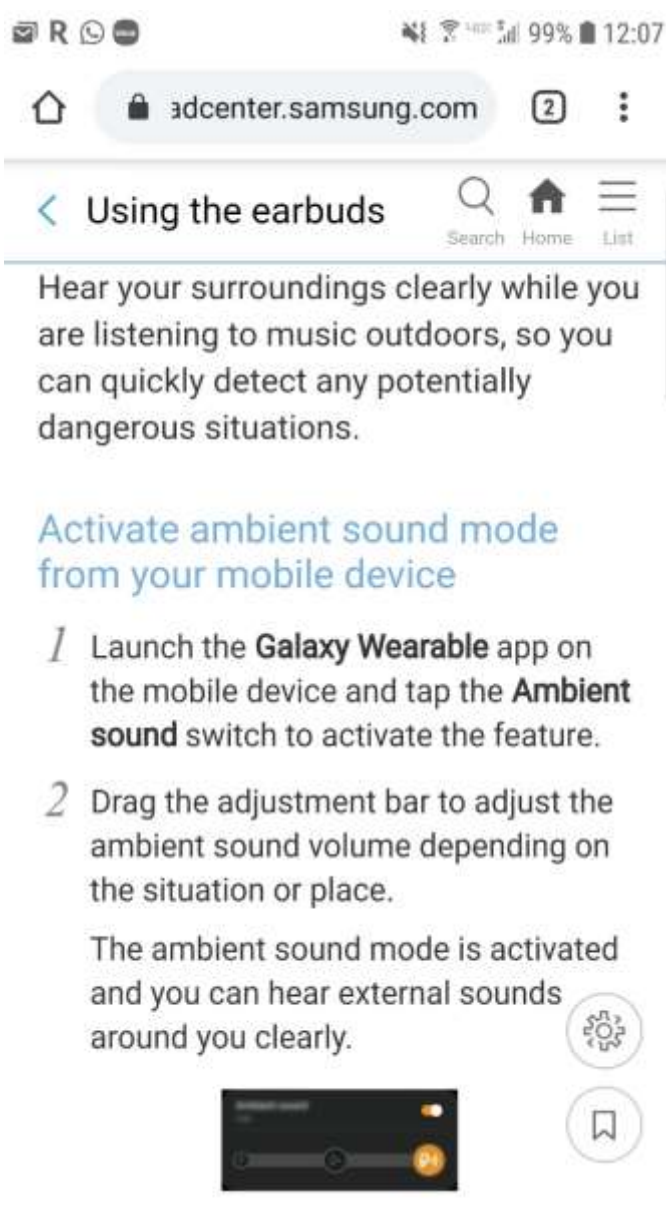


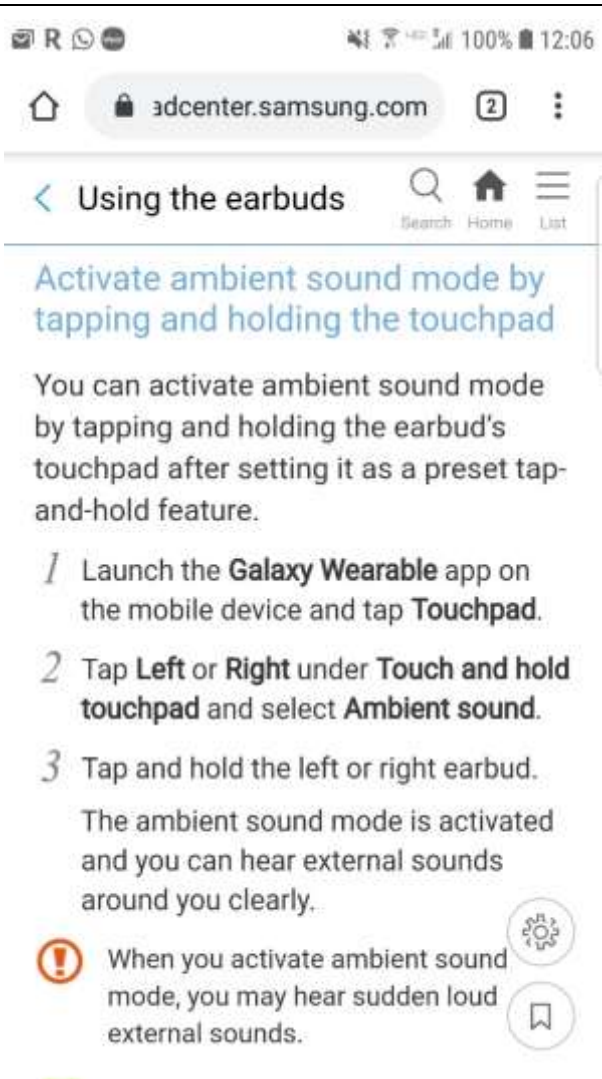
[33]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



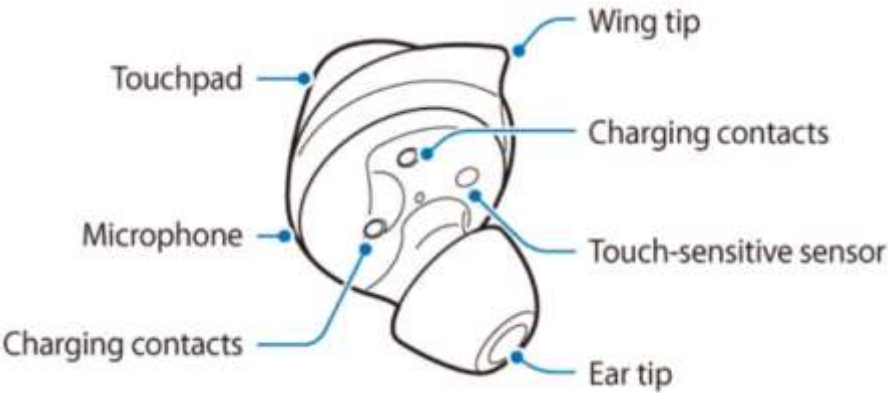
[25]

	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows the URL 'adcenter.samsung.com'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and list. The main content area has a heading 'Using the earbuds' followed by a paragraph: 'Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.' Below this is a sub-heading 'Activate ambient sound mode from your mobile device'. This is followed by a numbered list: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap the <b>Ambient sound</b> switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the list is a paragraph: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' At the bottom of the content area is a small image of a mobile screen showing a slider control. To the right of the text are two circular icons: a gear (settings) and a bookmark.</p> <p>[35]</p>
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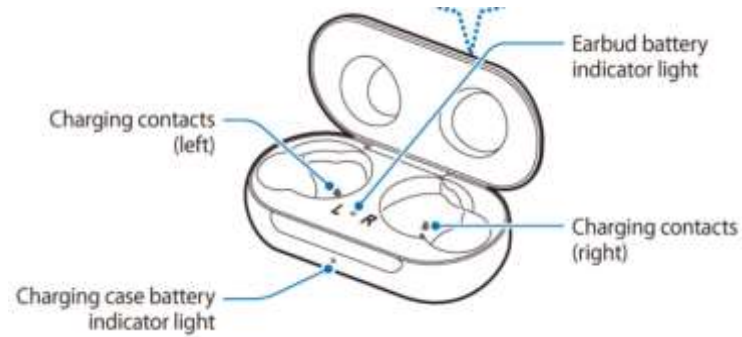


The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The browser address bar shows 'adcenter.samsung.com' with a lock icon and a tab indicator showing '2'. Below the address bar, the page title is 'Using the earbuds' with navigation icons for search, home, and a list. The main content area has a heading 'Activate ambient sound mode by tapping and holding the touchpad' in blue. Below this, a paragraph explains that ambient sound mode can be activated by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature. A numbered list follows: 1. Launch the **Galaxy Wearable** app on the mobile device and tap **Touchpad**. 2. Tap **Left** or **Right** under **Touch and hold touchpad** and select **Ambient sound**. 3. Tap and hold the left or right earbud. Below the list, a paragraph states that the ambient sound mode is activated and external sounds can be heard clearly. A warning icon (exclamation mark in a circle) is followed by the text: 'When you activate ambient sound mode, you may hear sudden loud external sounds.' To the right of the text are two circular icons: a gear (settings) and a bookmark. A green progress bar is visible at the bottom left of the content area.

[35]

Claim 9	Evidence
<p><b>9[pre].</b> A set of headphones for removably coupling with a holder body having one or more magnetically attractable first surfaces comprising:</p>	<p>The preamble is non-limiting. To the extent the preamble is determined to be limiting, Samsung Galaxy Buds and Samsung Galaxy Buds+ comprise a set of headphones for removably coupling with a holder body having one or more magnetically attractable first surfaces:</p> <p>Samsung Galaxy Buds comprise headphones for playing audio:</p>  <p>[1]</p> <p>Samsung Galaxy Buds headphones comprise a charging case with one or more magnetically attractable surfaces:</p>





[1]

### Galaxy Buds: Features

The buds' most iconic feature is their **wireless charging case**. The small, oval container **snaps the Galaxy Buds into place using tiny magnets** and can be placed on any Qi wireless charging mat to juice up. The S10's Wireless PowerShare lets users turn their smartphone into an extra wireless charger so that they can still charge Galaxy Buds on the go.

[2]

I used a paperclip to locate all 15 magnets in the case and buds (excluding the 2 driver magnets in the buds themselves).  
Interesting.

Uploaded Apr 12



[3]

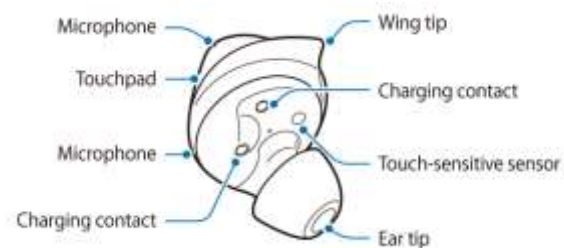


采用多颗磁铁辅助耳机定位。

[23]

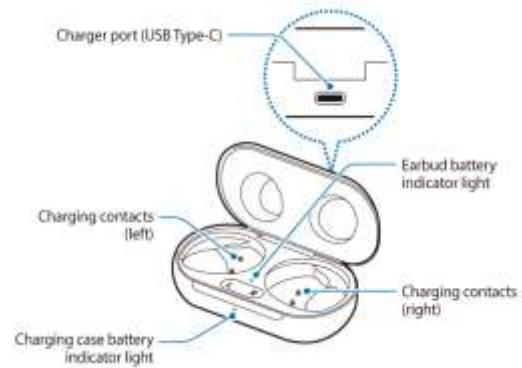
English Translation: Use multiple magnets to assist in headphone positioning

Samsung Galaxy Buds+ comprise earphones for playing audio:



[33]

Samsung Galaxy Buds+ comprise a charging case with one or more magnetically attractable surfaces:



[33]



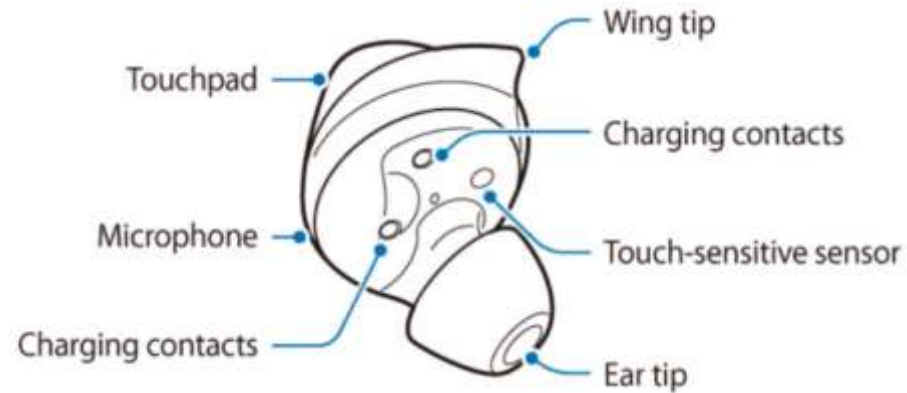
[32]



[32]

**9[a]** a set of headphones for playing transmitted audio and external audio, the set of headphones comprising one or more magnetic second surfaces;

Samsung Galaxy Buds comprise a set of headphones for playing audio comprising one or more magnetic second surfaces:



[1]

#### Galaxy Buds: Features

The buds' most iconic feature is their **wireless charging case**. The small, oval container **snaps the Galaxy Buds into place using tiny magnets** and can be placed on any Qi wireless charging mat to juice up. The S10's Wireless PowerShare lets users turn their smartphone into an extra wireless charger so that they can still charge Galaxy Buds on the go.

[2]

I used a paperclip to locate all 15 magnets in the case and buds (excluding the 2 driver magnets in the buds themselves).  
Interesting.

Uploaded Apr 12

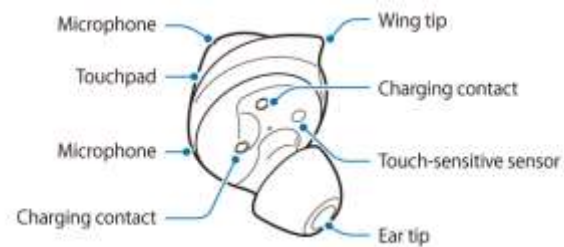


[3]



[23]

Samsung Galaxy Buds+ comprise a set of headphones for playing audio comprising one or more magnetic second surfaces:



[33]

**Your device contains magnets**, which may affect medical devices, such as pacemakers or implantable cardioverter defibrillators. If you are using any of these medical devices, keep your device a safe distance from them and consult with your physician before you use the device. [33]



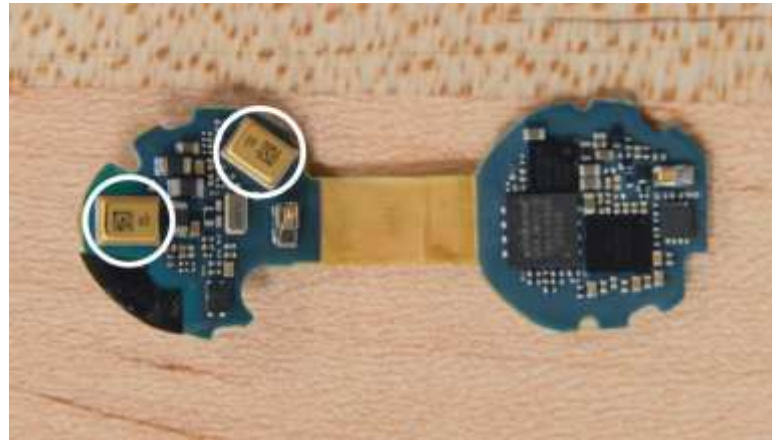
[25]



[25]



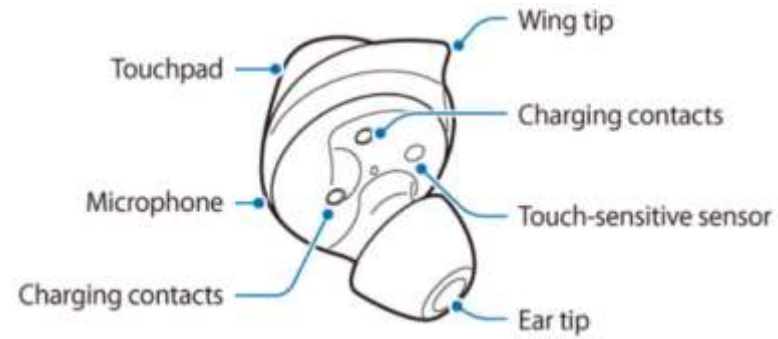
The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



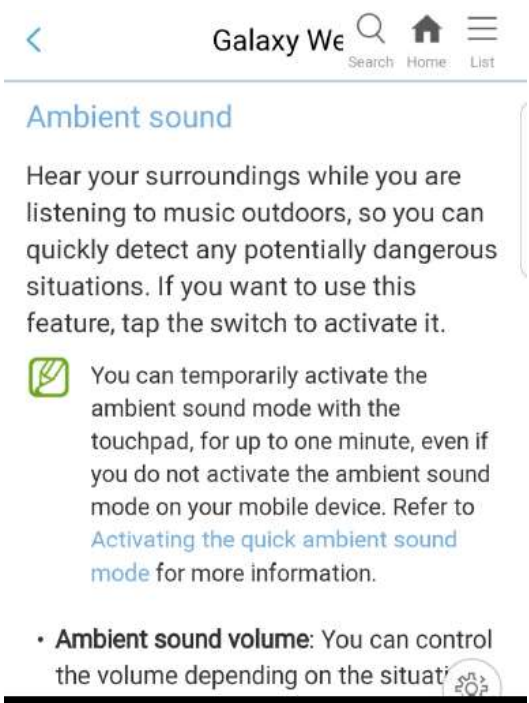


[25]

**9[b]** a microphone for receiving the external audio; and

Samsung Galaxy Buds comprise a microphone for receiving external audio:



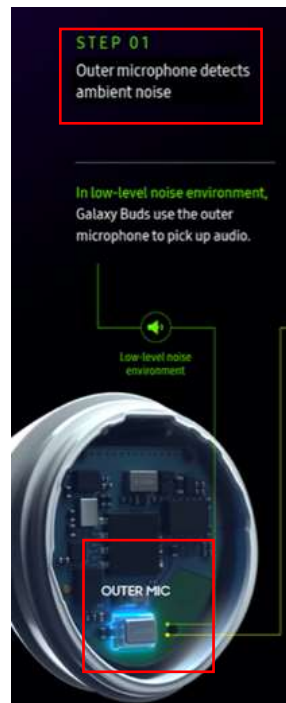
[1]

	 <p><b>Ambient sound</b></p> <p>Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations. If you want to use this feature, tap the switch to activate it.</p> <p> You can temporarily activate the ambient sound mode with the touchpad, for up to one minute, even if you do not activate the ambient sound mode on your mobile device. Refer to <a href="#">Activating the quick ambient sound mode</a> for more information.</p> <ul style="list-style-type: none"> <li>• <b>Ambient sound volume:</b> You can control the volume depending on the situation.  [1]</li> </ul> <p><b>Adaptive Dual Microphone</b></p> <p>Galaxy Buds' noise-canceling capability extends beyond the listening experience. Featuring an Adaptive Dual Microphone, the wireless earbuds also minimize external noise in phone conversations.</p> <p>The Adaptive Dual Microphone combines signals from an inner and outer microphone. <u>While the outer receiver detects audio in the surrounding area, the inner microphone picks up vibrations resonating inside the body.</u> By processing and mixing the two sources, the Adaptive Dual Microphone produces an accurate representation of the user's voice. The microphones are further enhanced by SolomonVoice technology and Wind Noise Reduction capability to help Galaxy Buds deliver the user's voice clearly.</p> <p>[17]</p>
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## Adaptive Dual Microphone

Galaxy Bud's Adaptive Dual Microphone mixes audio from an inner and outer microphone to produce clear voice calls.

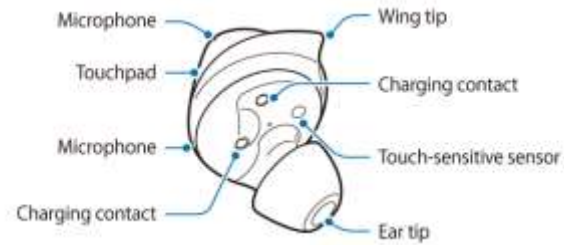
[17]



[17]

“Samsung insists that the Galaxy Buds are for talking just as much as they are for listening. Thanks to so-called ‘dual adaptive microphones,’ one on the inside and one on the outside of each earbud, the company says the person on the other end of your calls will hear you more clearly. That's because the earbuds can pick up on your surroundings and automatically switch between the two sets of mics to reduce background noise for whoever you're talking to.”[8]

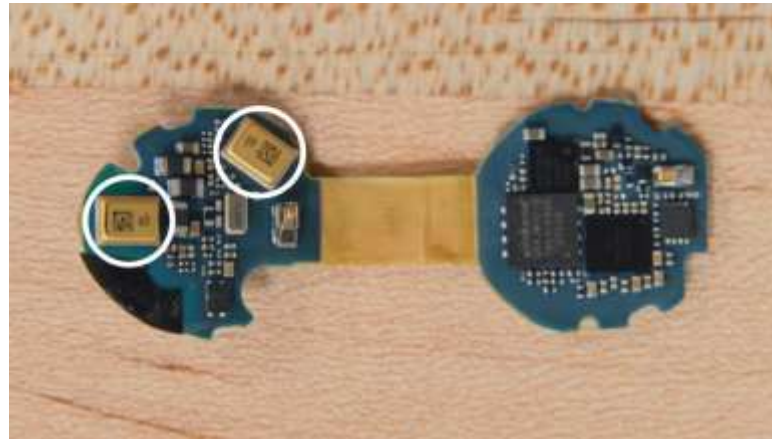
Samsung Galaxy Buds+ comprise a microphone for receiving external audio:



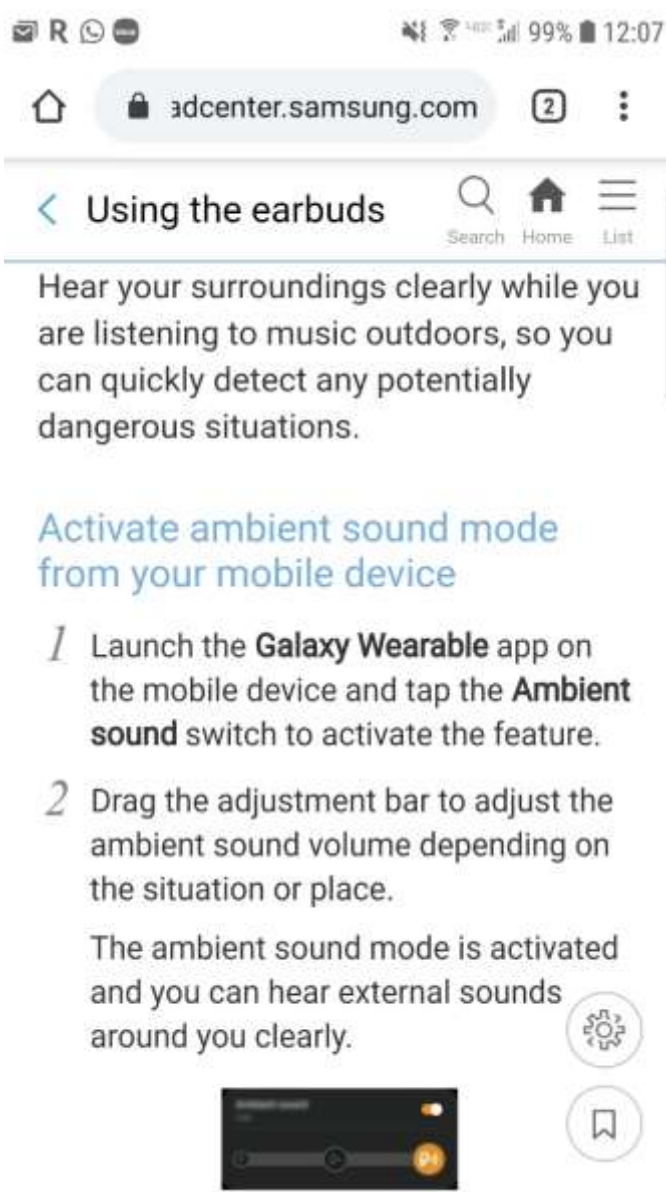
[33]

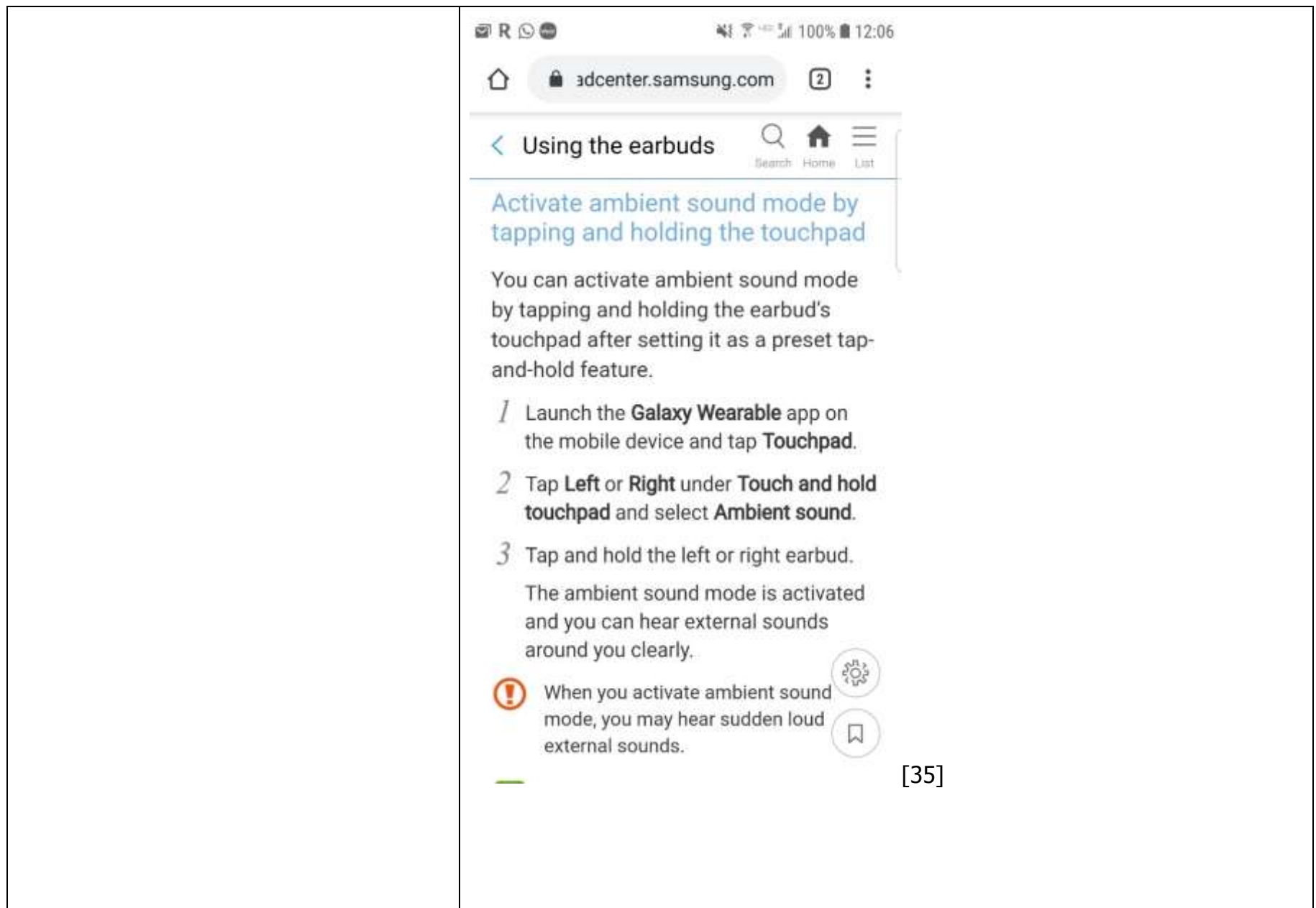
The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video).

[26]



[25]

	 <p>The screenshot shows a mobile app interface for Samsung. At the top, the status bar displays various icons and 99% battery. The app's header shows the URL 'adcenter.samsung.com' and a home icon. Below the header, the title 'Using the earbuds' is followed by search, home, and list icons. The main content area contains a paragraph about hearing surroundings clearly, followed by a blue link 'Activate ambient sound mode from your mobile device'. Below this are two numbered steps: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap the <b>Ambient sound</b> switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. A paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' At the bottom, there is a small image of the ambient sound mode slider and two circular icons (a gear and a bookmark).</p> <p>[35]</p>
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**9[c]** a headphones controller coupled to receive an activation signal when a magnetic decoupling is detected as one or more of the magnetic second surfaces is removed and decoupled from one of the one or more magnetically attractable first surfaces, wherein the activation signal causes the transmitted audio to be played in the headphones.

Samsung Galaxy Buds comprise a headphones controller coupled to receive an activation signal when one or more of the set of earphones are decoupled from one of the one or more magnets:

### Broadcom Wireless Audio Chip Powers Samsung Galaxy Buds

Broadcom BCM43014 delivers premium Bluetooth sound and unmatched battery life in ultra-compact footprint

SAN JOSE, Calif., Feb. 28, 2019 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today unveiled the BCM43014 chip enabling the Samsung Galaxy Buds to deliver a premium audio experience. The BCM43014 is a highly-integrated low power SoC that brings together unique innovations in Bluetooth, audio DSP and sensor hub technology to render rich audio while delivering up to six hours of Bluetooth streaming or five hours of voice calls.

[4]

Built on Broadcom's unique combination of deep semiconductor expertise and wireless audio engineering, the BCM43014 is engineered to meet the design requirements for in-ear wireless devices. In addition to Bluetooth 5, the chip is packed with innovative features and capabilities that:

- Allows for seamless integration of advanced acoustic algorithms that reduce background noise to deliver rich sound.
- Delivers synchronized audio to both the earbuds for various daily user scenarios using Broadcom's InConcert® technology to create a truly wireless experience.
- Innovates with a holistic low power system-level design that spans radio design, protocol optimization and software techniques.
- Seamlessly connects both Buds with phone and quickly switches between devices with Broadcom's advanced Bluetooth pairing technology to deliver continuity of content for the consumer.
- Enables the integration of the multi-dimensional sensors behind the convenient and intuitive user interface on the Buds.
- Facilitates slim earbud design by integrating multiple audio components into a single chip and reducing the overall bill of materials.



[4]

Galaxy Buds also comprise an ABOV F6432AUB Micro Controller Unit.

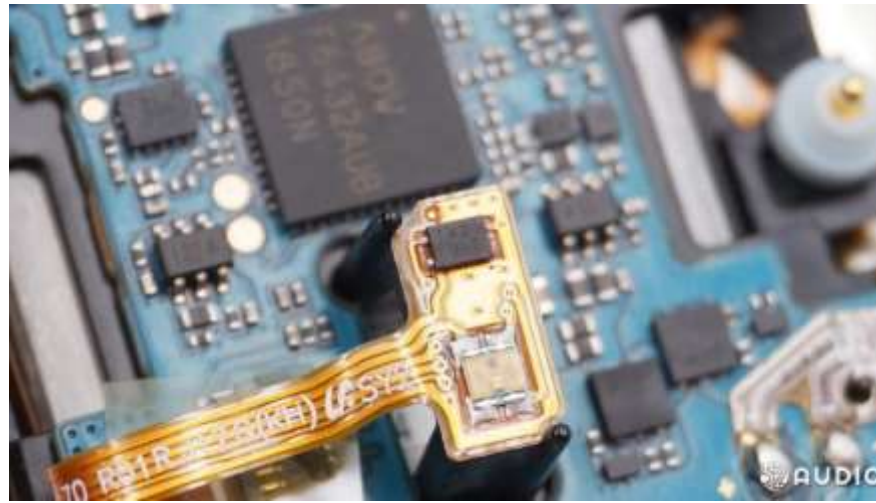


[14]

On information and belief, the ABOV F6432AUB and the controller and/or sensor hub of the BCM43014 System on Chip and are responsive to a magnetic Hall sensor:

	<div><div>Dimensions &amp; Weight</div><div><div></div><div><div>Ear Buds</div><div>17.5 x 22.5 x 19.2mm</div><div>5.6g</div></div></div><div><div></div><div><div>Cradle</div><div>70 x 38.8 x 26.5mm</div><div>39.6g</div></div></div><div>Performance</div><div>AP</div><div>BCM43014</div></div> <div><div>Samsung Galaxy Buds - The Official Samsung Galaxy Site</div><div><div>Sensor</div><div>Accelerometer, Proximity, Hall, Touch</div></div></div>
--	---

[5]



[14]

On information and belief, Galaxy Buds are compatible with Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e.

#### Compatibility

Samsung, other Android: Android 5.0 or higher & RAM 1.5GB above

[5]

# Quick pairing out of the box

Just pop open and pair. Galaxy Buds work right out of the box, connecting with your Galaxy devices in an instant via Bluetooth to get you up to the beat and well on your way. [1,2,3](#)

[6]



[15]

Galaxy Buds automatically connects to the user's smartphone when the case is open and disconnects when placed back in the case. With a simple touch on the surface of an earbud, users can play or pause the current song, or move onto the previous or next song. Users can even give orders or turn on and off certain features using voice command.

[15]

Also, Samsung Galaxy buds detect if one or more earbuds are decoupled from one or more of the magnetically attractable surfaces attached to the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnetically attractable surfaces attached to the holder body, the audio stops.

The Galaxy Buds will detect how many earbuds are in its case and will switch the sound output to mono or stereo based on how many earbuds are in the charging case. If you put both Galaxy Buds into the charging case, the music will stop automatically.



[24]

On information and belief, Galaxy Buds are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

**Android & iOS compatible**

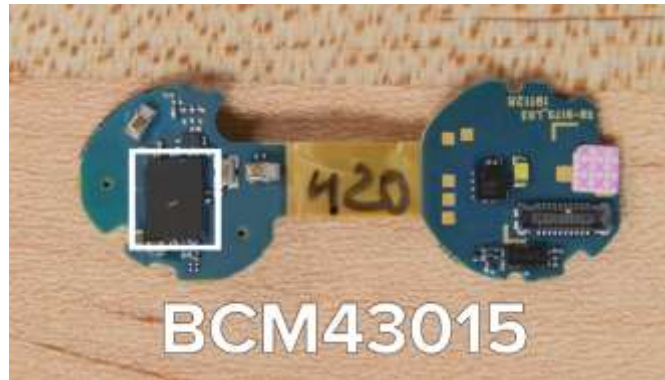
The Galaxy Buds pair with both  
Android and iOS compatible  
smartphones via Bluetooth  
connection.<sup>4</sup>

[7]

When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds earphones activate and begin playing audio when removed from the charging case.

The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds earphones are deactivated and cannot play audio when in the holder.

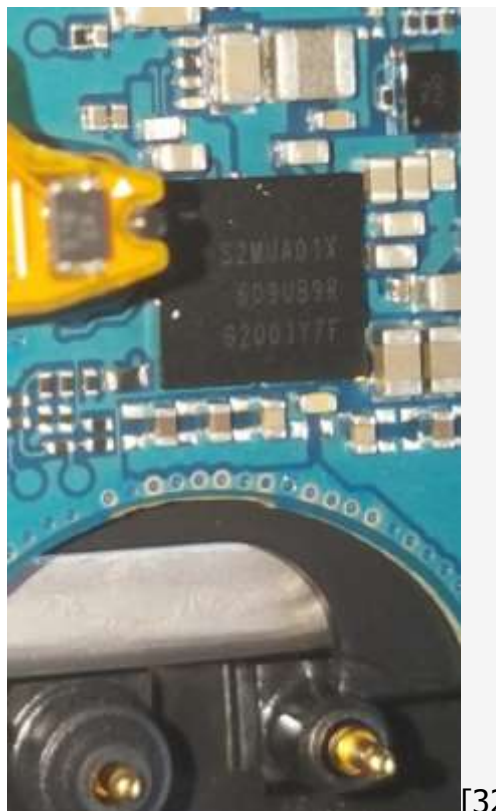
Samsung Galaxy Buds+ comprise a headphones controller coupled to receive an activation signal when one or more of the set of earphones are decoupled from one of the one or more magnets:



[25]

Galaxy Buds+ also include Samsung S2MUA01X chips. On information and belief, the S2MUA01X chips include a controller unit.





[32]

On information and belief, BCM43015 System on Chip includes a control unit and a sensor hub. On information and belief, the Samsung S2MUA01X chips and the control unit and/or sensor hub of the BCM43015 System on Chip are responsive to a magnetic Hall sensor:

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]

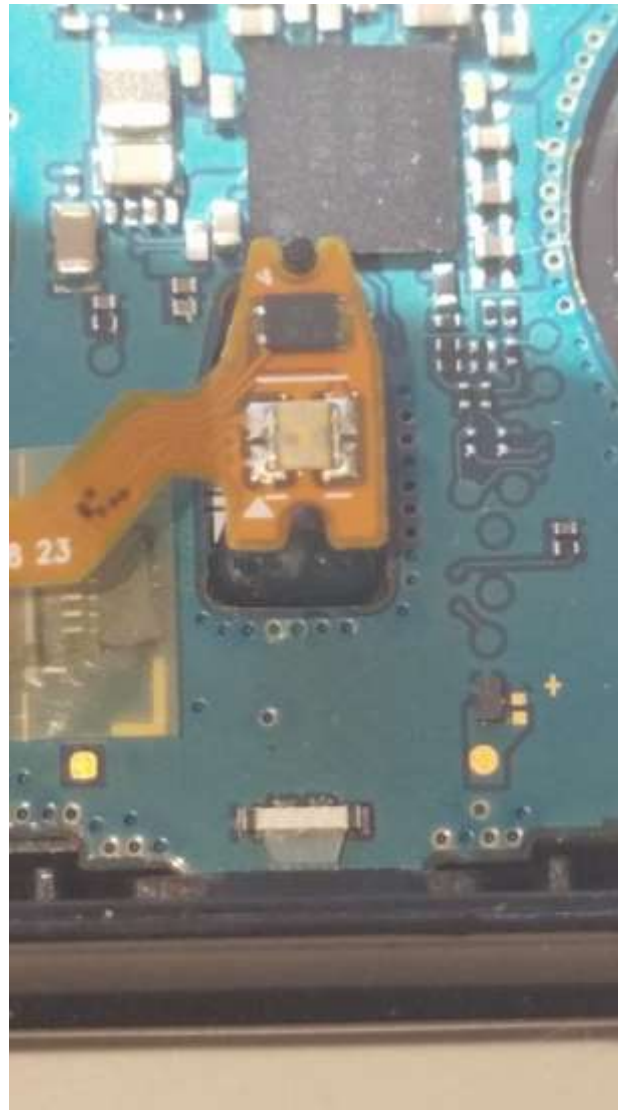


[25]

The screenshot shows the Samsung website's product page for Galaxy Buds+. The page features a dark navigation bar with the Samsung logo and a menu for Galaxy Buds+. Below the navigation bar, there is a section titled 'Specs' which lists various specifications for the device. The specifications are organized into a table-like format with categories on the left and details on the right.

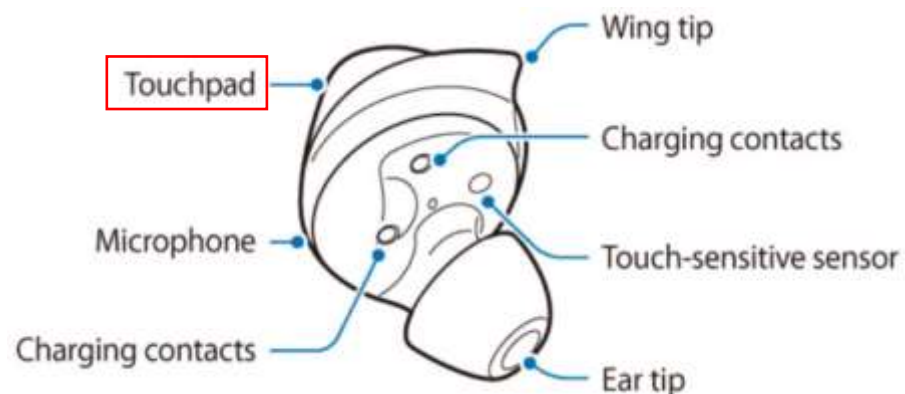
SAMSUNG Galaxy Buds+	
<a href="#">Overview</a> <a href="#">GALAXY BUDS+</a> <a href="#">AUDIO</a> <a href="#">BATTERY</a> <a href="#">DESIGN</a> <a href="#">CONVENIENCE</a> <a href="#">ECOSYSTEM</a> <a href="#">COMPARE</a> <a href="#">SPECS</a>	
<a href="#">Link: Source (Samsung proprietary) 40, 58 </a>	
Battery	<div> <div></div> <div>65mAh</div> <div>270mAh</div> </div>
Sensor	Accelerometer, IR, Hall, Touch
Compatibility	Samsung, other Android, Android 5.0 or higher & RAM 1.5GB above

[31]



[32]

	<p>Also, Samsung Galaxy Buds+ detect if one or more earbuds are decoupled from one or more of the magnets comprising the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnets comprising the holder body, the audio stops.</p> <p>The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds+ earphones are deactivated and cannot play audio when in the holder.</p> <p>Galaxy Buds+ are compatible with smartphones and tablets running Android 5.0 or higher, including without limitation Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, Galaxy S10e, S20, S20+ and S20 Ultra 5G.</p> <p>In addition, Galaxy Buds+ are compatible with iPhone7 or later models with iOS10 of higher.</p> <p><sup>10</sup> Compatible with smartphones and tablet running Android 5.0 or higher and with more than 1.5GB of RAM. Also compatible with iPhone7 or later models with the iOS 10 or higher. [34]</p>
Claim 10	Evidence
<p><b>10.</b> The set of headphones of claim 9, wherein a first set of controls control the volume of transmitted audio played by the headphones and a second set of controls control the volume of external audio played by the headphones.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with the first set of controls to control the volume of transmitted audio played by the headphones and a second set of controls to control the volume of external audio played by the headphones:</p>

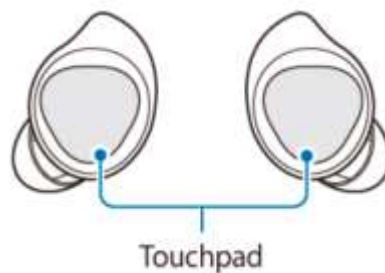


[1]

Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input for controlling a volume of the transmitted audio played by the headphones:

### Using the touchpad

You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.



[1]

### Tap and hold

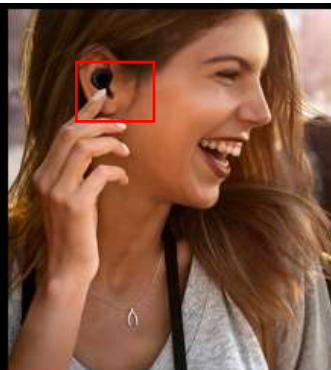
- Activate a preset feature. [1]

### Setting a preset tap-and-hold feature

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command**: Start a conversation with Bixby.
  - **Quick ambient sound**: Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up**: Adjust the volume.

[1]

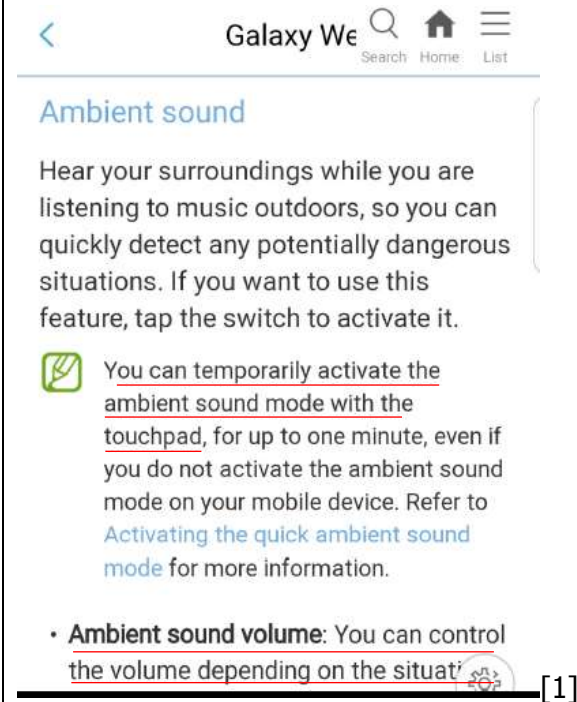


### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

[16]

Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:





### Adaptive Dual Microphone

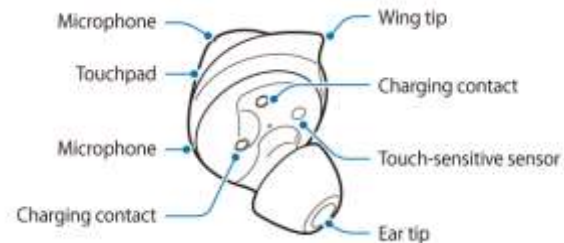
Galaxy Buds' noise-canceling capability extends beyond the listening experience. Featuring an Adaptive Dual Microphone, the wireless earbuds also minimize external noise in phone conversations.

The Adaptive Dual Microphone combines signals from an inner and outer microphone. While the outer receiver detects audio in the surrounding area, the inner microphone picks up vibrations resonating inside the body. By processing and mixing the two sources, the Adaptive Dual Microphone produces an accurate representation of the user's voice. The microphones are further enhanced by SolomonVoice technology and Wind Noise Reduction capability to help Galaxy Buds deliver the user's voice clearly.

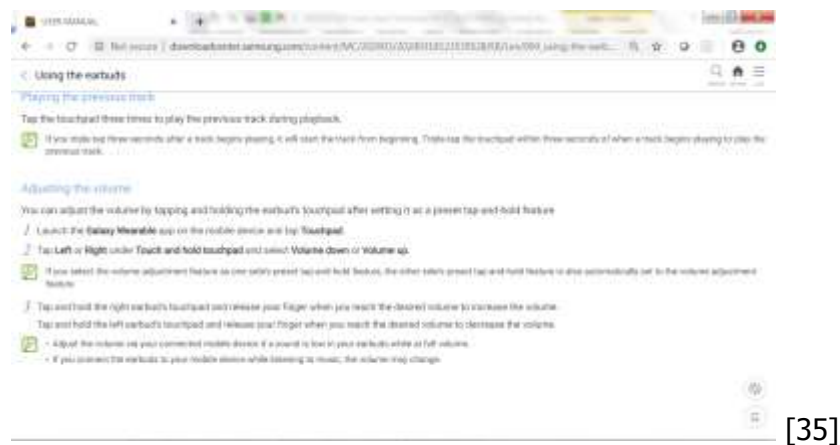
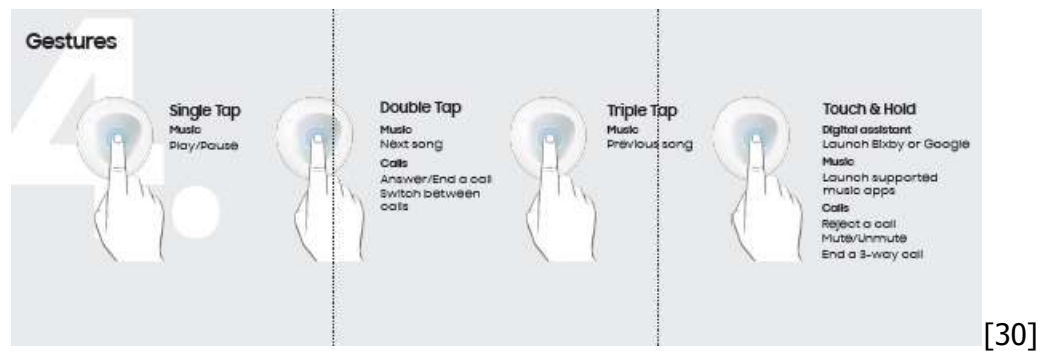
[17]

Moreover, Samsung Galaxy Buds allow control of volume through controls on a connected device.

Samsung Galaxy Buds+ comprise a set of headphones with the first set of controls to control the volume of transmitted audio played by the headphones and a second set of controls to control the volume of external audio played by the headphones:

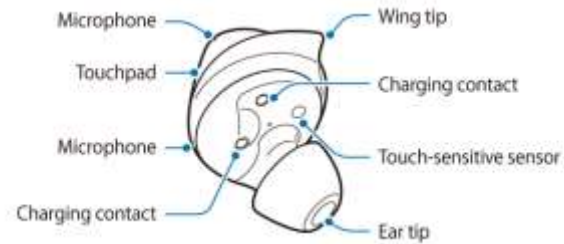


[33]



Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

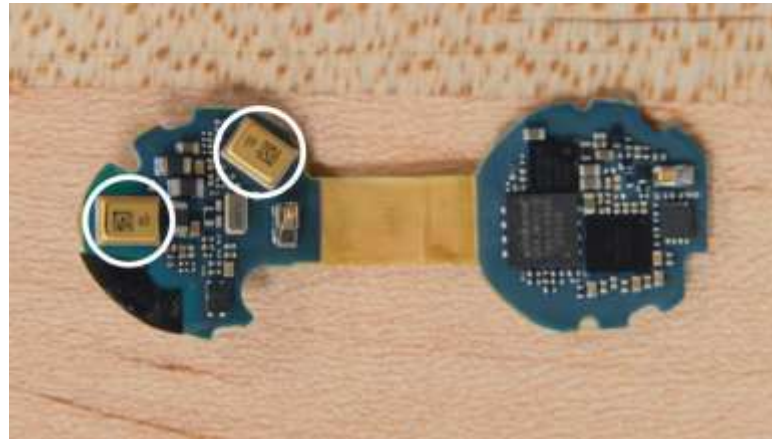
Samsung Galaxy Buds+ comprise a microphone for receiving external audio:



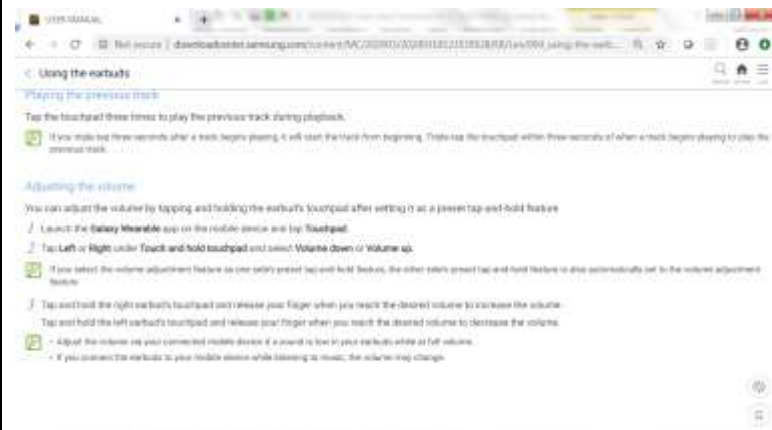
[33]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video).

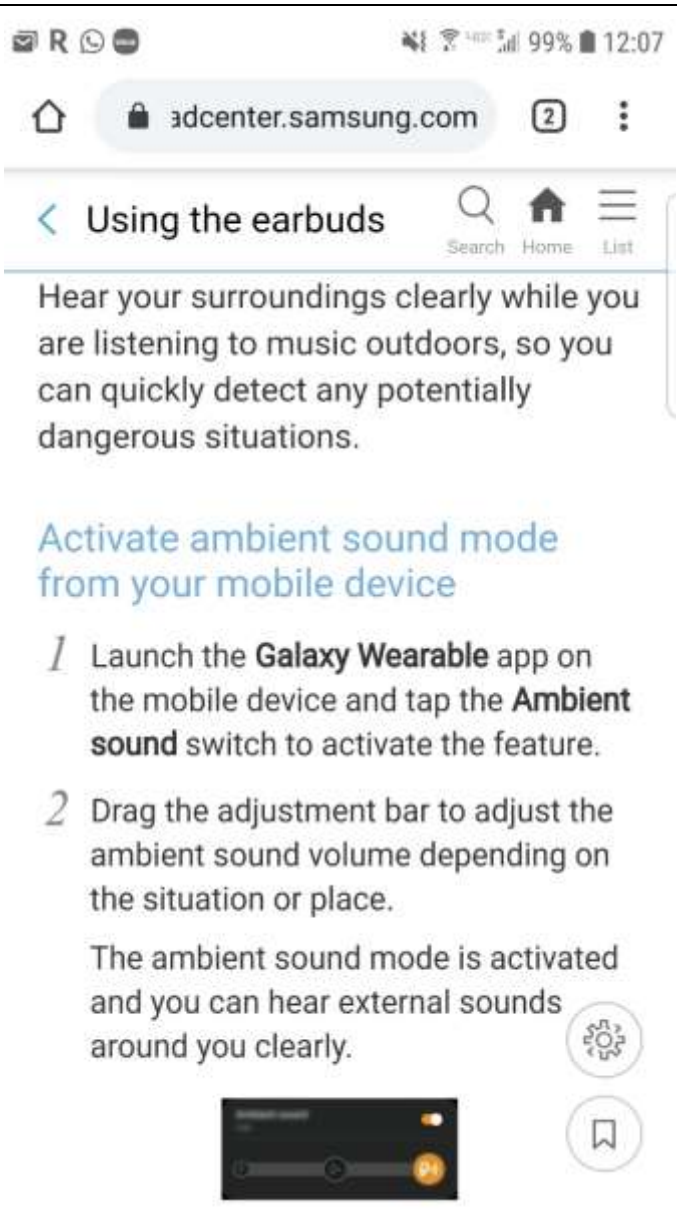
[26]



[25]

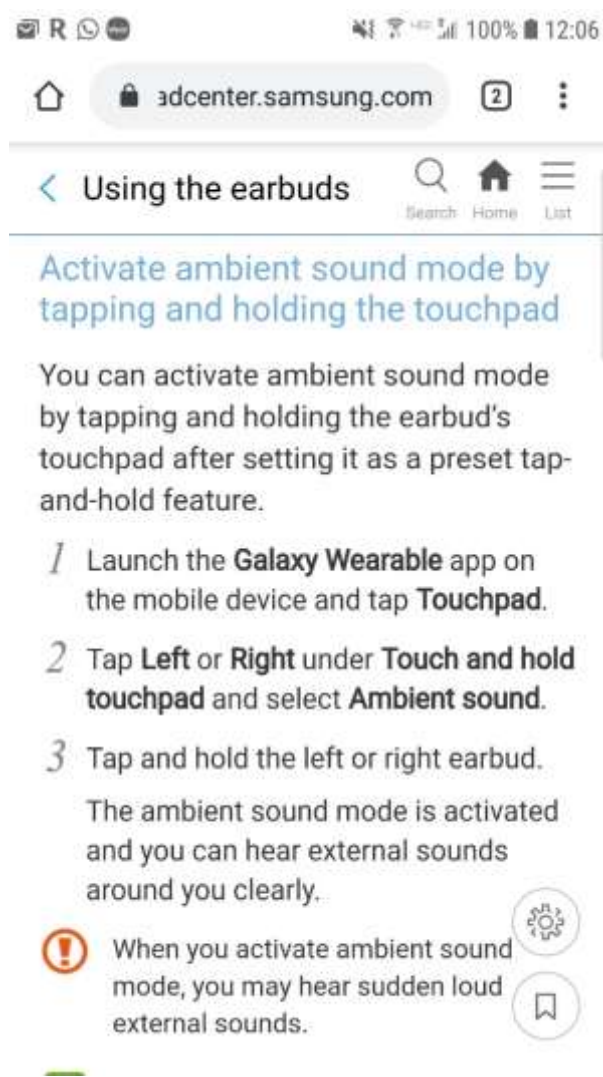


[35]



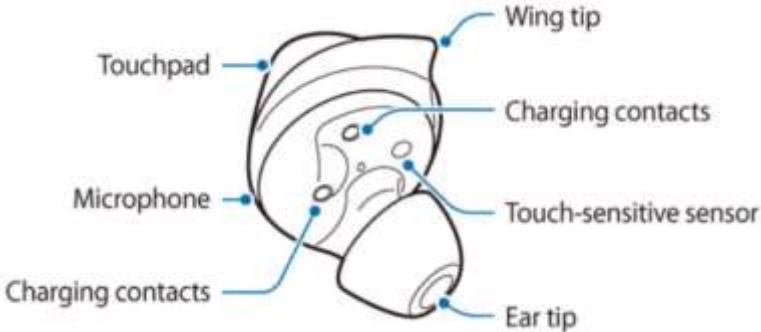
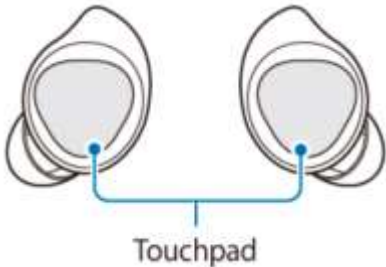
The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows the URL "adcenter.samsung.com" with a home icon on the left and a tab indicator with the number "2" on the right. Below the address bar is a navigation bar with a back arrow, the title "Using the earbuds", and icons for search, home, and a list. The main content area has a heading "Using the earbuds" followed by a paragraph: "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." Below this is a sub-heading "Activate ambient sound mode from your mobile device". A numbered list follows: "1 Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature." and "2 Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place." Below the list, a paragraph states: "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom left, there is a small image of a mobile screen showing a slider control. To the right of the text are two circular icons: a gear (settings) and a bookmark.

[35]



[35]

Moreover, Samsung Galaxy Buds+ allow control of volume through controls on a connected device.

Claim 11	Evidence
<p><b>11.</b> The set of headphones of claim 10, wherein the first set of controls and the second set of controls comprise touch sensitive controls.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input for controlling audio played by the headphones:</p>  <p>[1]</p> <p><b>Using the touchpad</b></p> <p>You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.</p>  <p>[1]</p> <p><b><u>Tap and hold</u></b></p> <ul style="list-style-type: none"> <li>• <u>Activate a preset feature.</u> [1]</li> </ul>

#### Setting a preset tap-and-hold feature

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command**: Start a conversation with Bixby.
  - **Quick ambient sound**: Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up**: Adjust the volume.

[1]

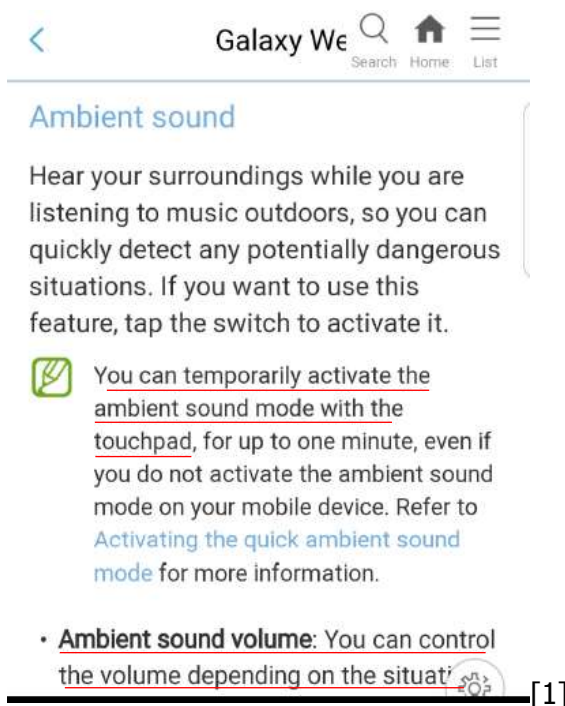
#### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

[16]

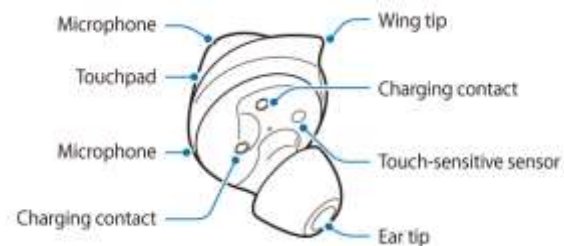
Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



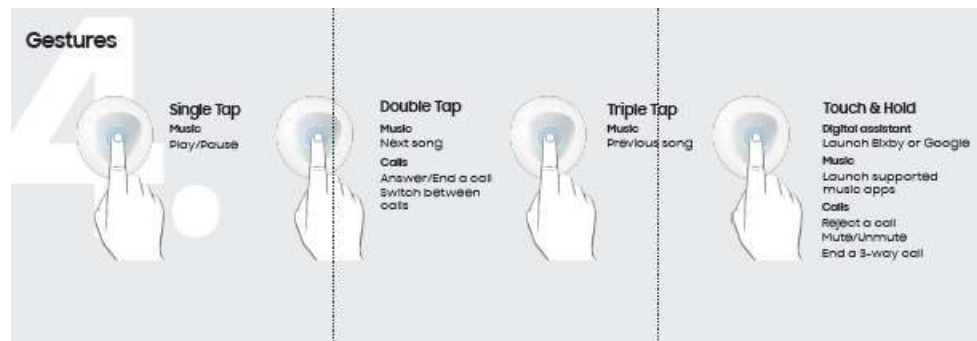


Moreover, Samsung Galaxy Buds+ allow control of volume through touch sensitive controls on a connected device.

Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input for controlling audio played by the headphones:



[33]



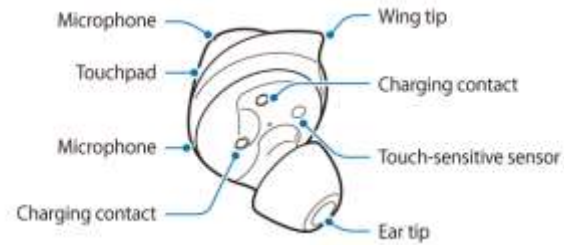
[30]



[35]

Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

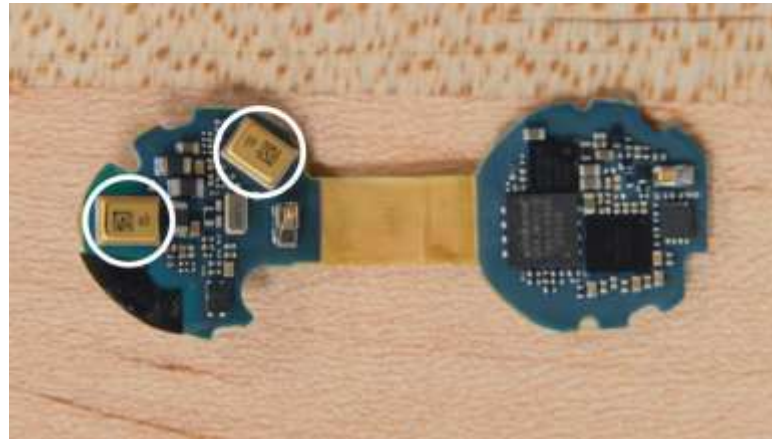
Samsung Galaxy Buds+ comprise a microphone for receiving external audio:



[33]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video).

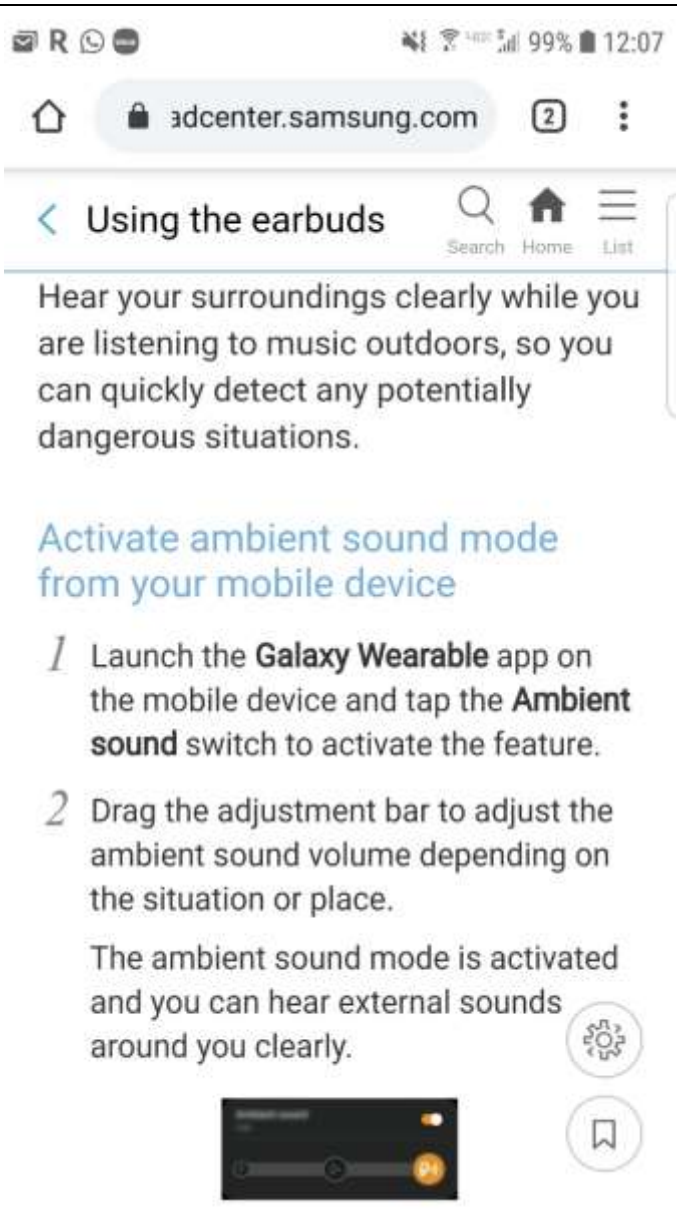
[26]



[25]

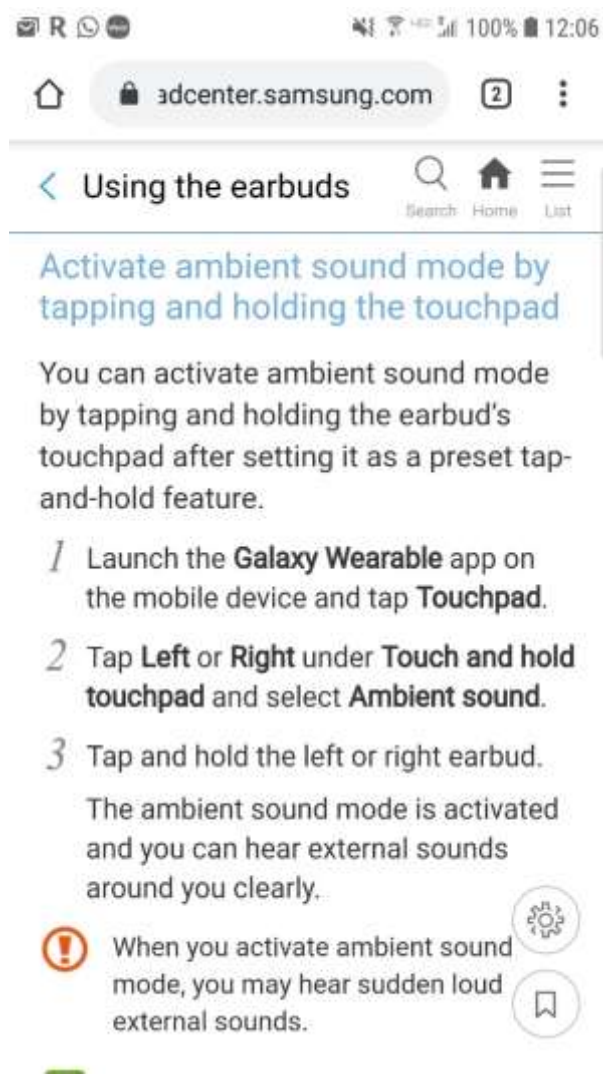


[35]

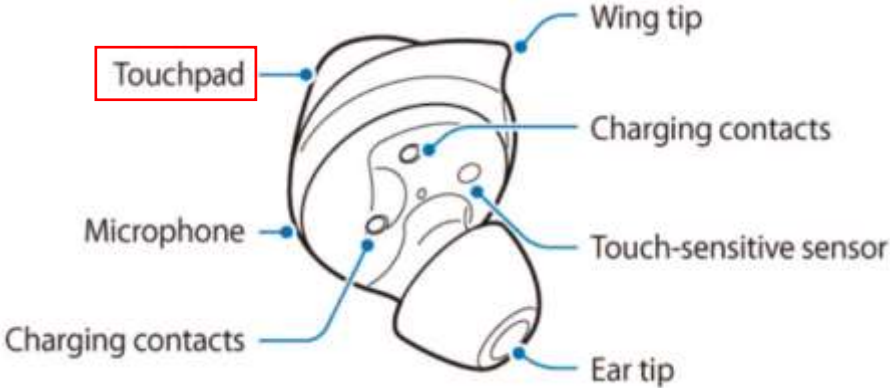
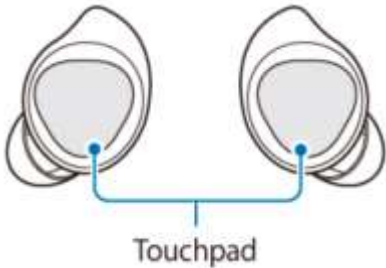


The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows the URL [adcenter.samsung.com](http://adcenter.samsung.com). Below the address bar, the page title is "Using the earbuds". The main content area has a heading "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." followed by a subheading "Activate ambient sound mode from your mobile device". Two numbered steps are listed: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the steps, a text block states: "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom, there is a small image of a mobile device screen showing a slider control for ambient sound volume, and two circular icons (a gear and a bookmark) are visible on the right side.

[35]



Moreover, Samsung Galaxy Buds+ allow control of volume through touch sensitive controls on a connected device.

Claim 13	Evidence
<p><b>13.</b> The set of headphones of claim 10, wherein the first set of controls and the second set of controls are a component of the headphones.</p>	<p>Samsung Galaxy Buds include a set of headphones with a touchpad for controlling audio played by the headphones:</p>  <p>[1]</p> <p><b>Using the touchpad</b></p> <p><u>You can control music playback</u>, answer or reject calls, and start a conversation with Bixby using the touchpad.</p>  <p>[1]</p>

## Tap and hold

- Activate a preset feature. [1]

### Setting a preset tap-and-hold feature

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command:** Start a conversation with Bixby.
  - **Quick ambient sound:** Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up:** Adjust the volume.

[1]



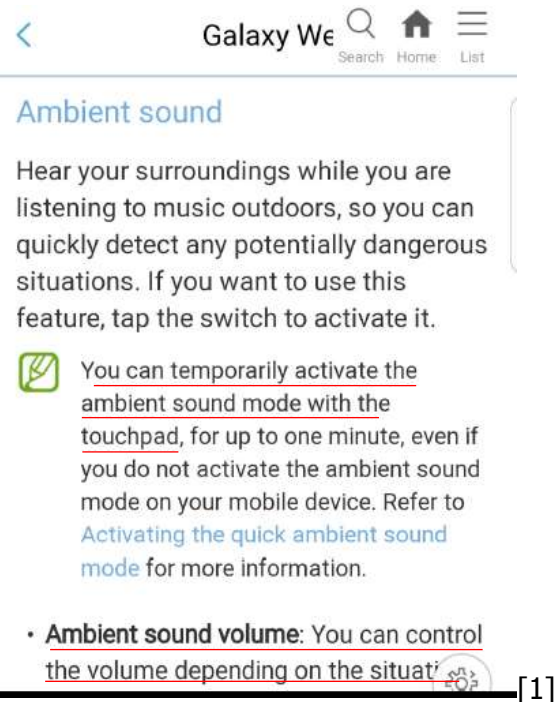
### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

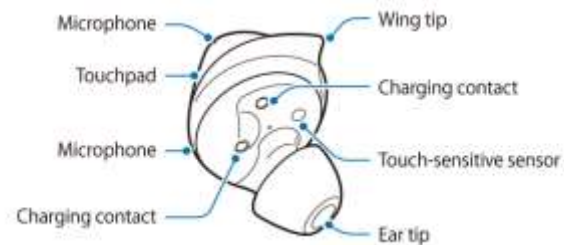
[16]



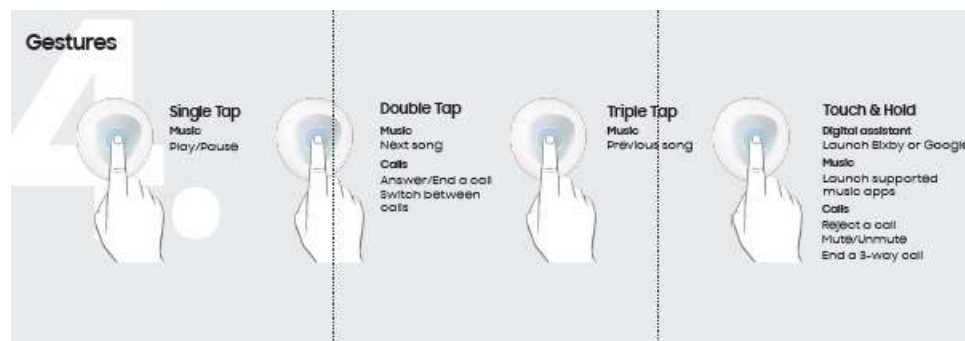
Samsung Galaxy Buds comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input for controlling audio played by the headphones:



[33]



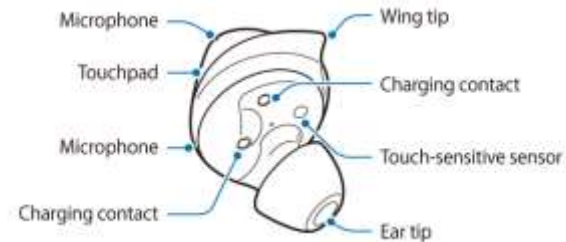
[30]



[35]

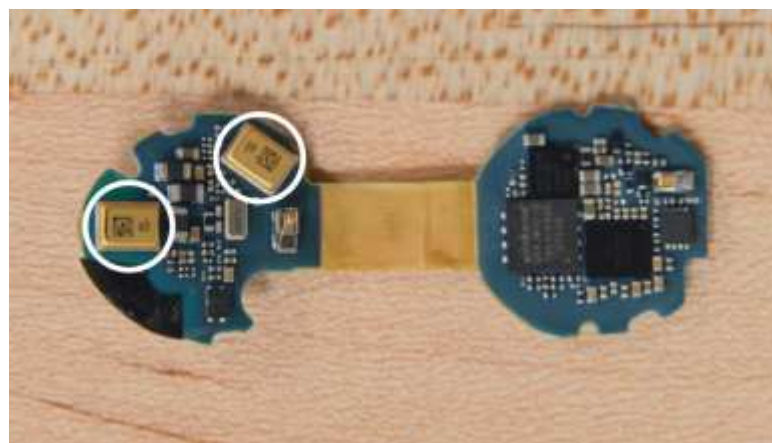
Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

Samsung Galaxy Buds+ comprise a microphone for receiving external audio:



[33]

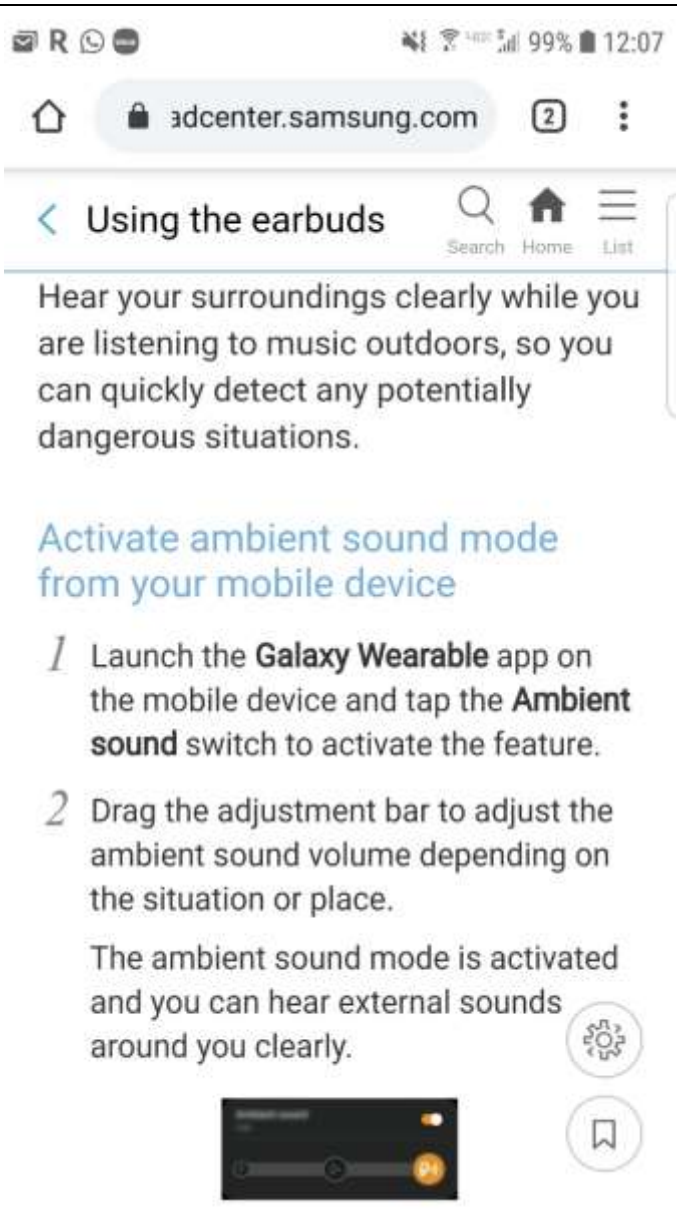
The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]



[35]



The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows a home icon, a lock icon, and the URL 'adcenter.samsung.com'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and list. The main content area has a heading 'Using the earbuds' and a paragraph: 'Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.' Below this is a sub-heading 'Activate ambient sound mode from your mobile device'. A numbered list follows: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the list is a paragraph: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' At the bottom, there is a small image of a mobile device screen showing a slider control, and two circular icons: a gear (settings) and a bookmark.

Using the earbuds

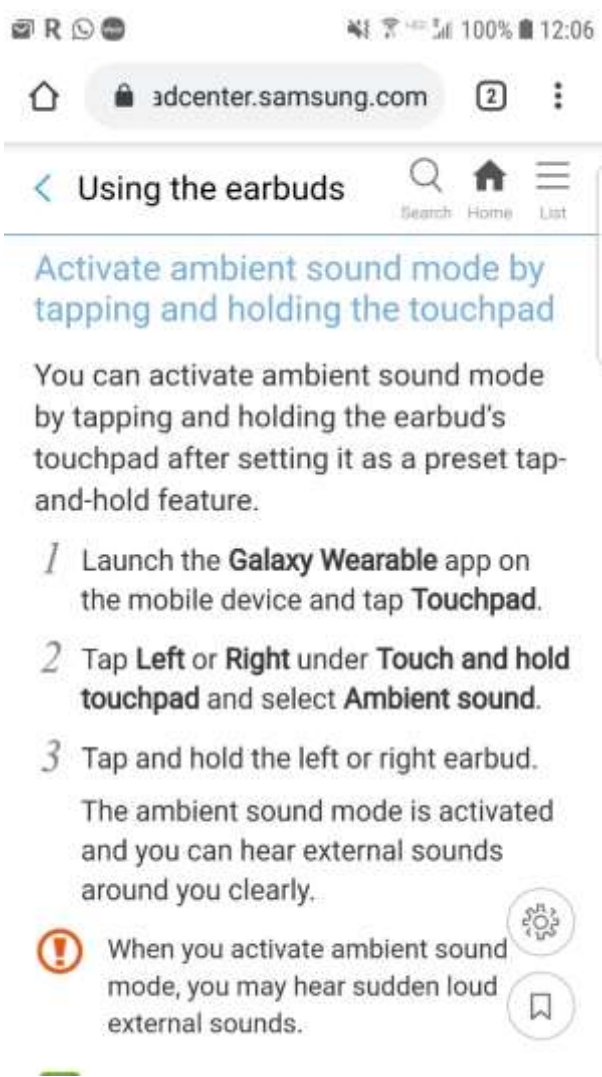
Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

Activate ambient sound mode from your mobile device

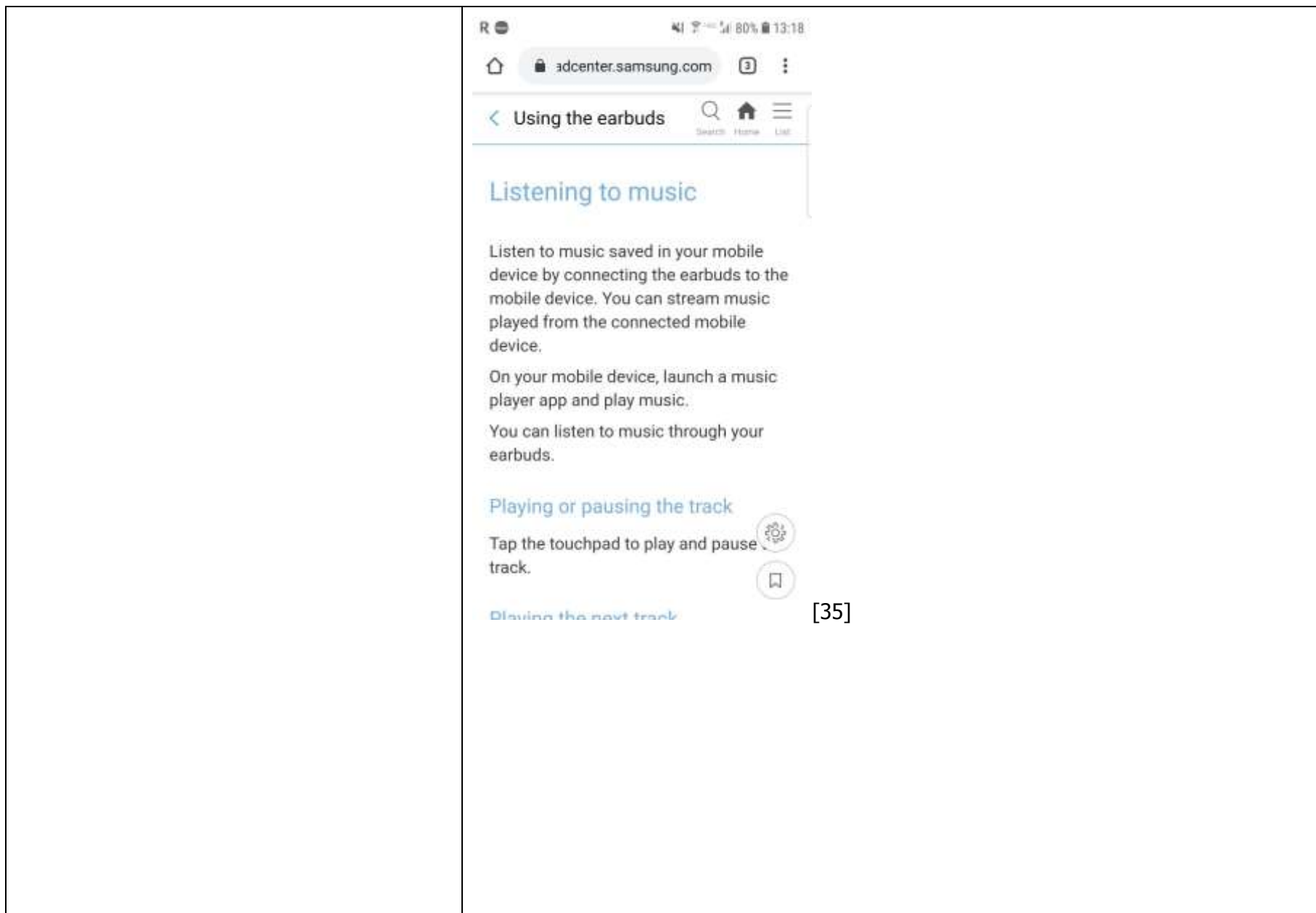
- 1 Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature.
- 2 Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place.

The ambient sound mode is activated and you can hear external sounds around you clearly.


[35]

	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The address bar shows the URL 'sdcenter.samsung.com'. Below the address bar, there's a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list. The main content area has a heading 'Activate ambient sound mode by tapping and holding the touchpad' in blue. Below this, a paragraph explains that ambient sound mode can be activated by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature. A numbered list follows: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap <b>Touchpad</b>. 2. Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b> and select <b>Ambient sound</b>. 3. Tap and hold the left or right earbud. Below the list, a paragraph states that the ambient sound mode is activated and you can hear external sounds clearly. A warning icon (exclamation mark in a circle) is followed by the text: 'When you activate ambient sound mode, you may hear sudden loud external sounds.' To the right of the text are two circular icons: a gear (settings) and a bookmark. A green horizontal line is at the bottom left of the content area.</p> <p>[35]</p>
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Claim 14	Evidence
<p><b>14.</b> The set of headphones of claim 9, wherein the transmitted audio comprises audio received from an electronic device.</p>	<p>Samsung Galaxy Buds comprise a set of headphones for playing audio received from the electronic device:</p> <p><b>Perfectly paired</b></p> <p><u>Pair Samsung Galaxy Buds with your phone or tablet and go. Listen and chat during the day, then wirelessly recharge for 15 minutes to get up to 1.7 more hours of play time. With sound by AKG, Galaxy Buds deliver calls, your favorite podcasts and the music you love while keeping you aware of your surroundings when walking, working or working out.</u></p> <p>[16]</p> <p>Samsung Galaxy Buds+ comprise a set of headphones for playing audio received from the electronic device:</p>





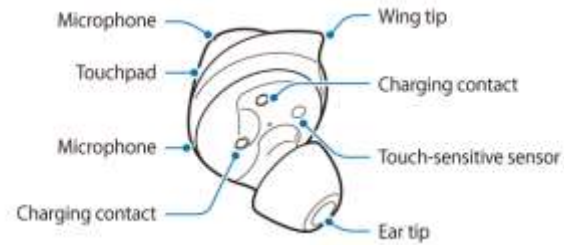
Claim 15	Evidence
<p><b>15.</b> The set of headphones of claim 9, wherein the external audio comprises surrounding ambient noise received from the external microphone.</p>	<p>Samsung Galaxy Buds comprise a set of earphones wherein external audio comprises surrounding ambient noise; the headphones use an Adaptive dual microphone and external (e.g. Outer) microphone to detect and control ambient noise:</p> <p><b>Adaptive Dual Microphone</b></p> <p>Galaxy Buds' noise-canceling capability extends beyond the listening experience. Featuring an Adaptive Dual Microphone, the wireless earbuds also minimize external noise in phone conversations.</p> <p>The Adaptive Dual Microphone combines signals from an inner and outer microphone. <u>While the outer receiver detects audio in the surrounding area</u>, the inner microphone picks up vibrations resonating inside the body. By processing and mixing the two sources, the Adaptive Dual Microphone produces an accurate representation of the user's voice. The microphones are further enhanced by SolomonVoice technology and Wind Noise Reduction capability to help Galaxy Buds deliver the user's voice clearly.</p> <p>[17]</p>  <p>Galaxy Bud's Adaptive Dual Microphone mixes audio from an inner and outer microphone to produce clear voice calls.</p> <p>[17]</p>



[17]

Samsung Galaxy Buds+ comprise a set of earphones wherein external audio comprises surrounding ambient noise; the headphones use microphones to detect and control ambient noise:

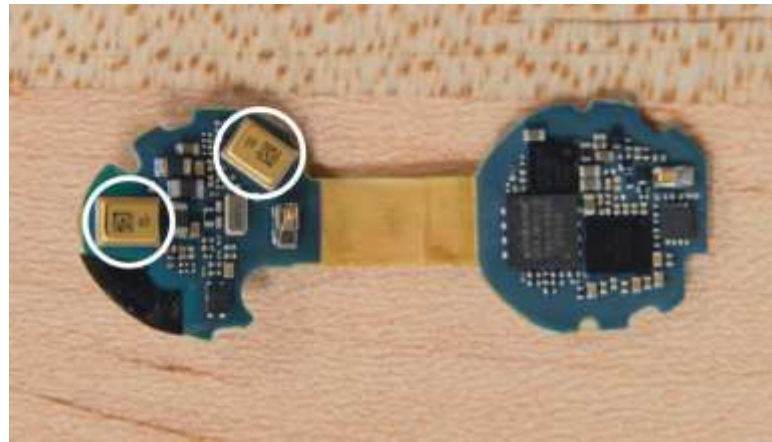
Samsung Galaxy Buds+ comprise a microphones for receiving external audio:



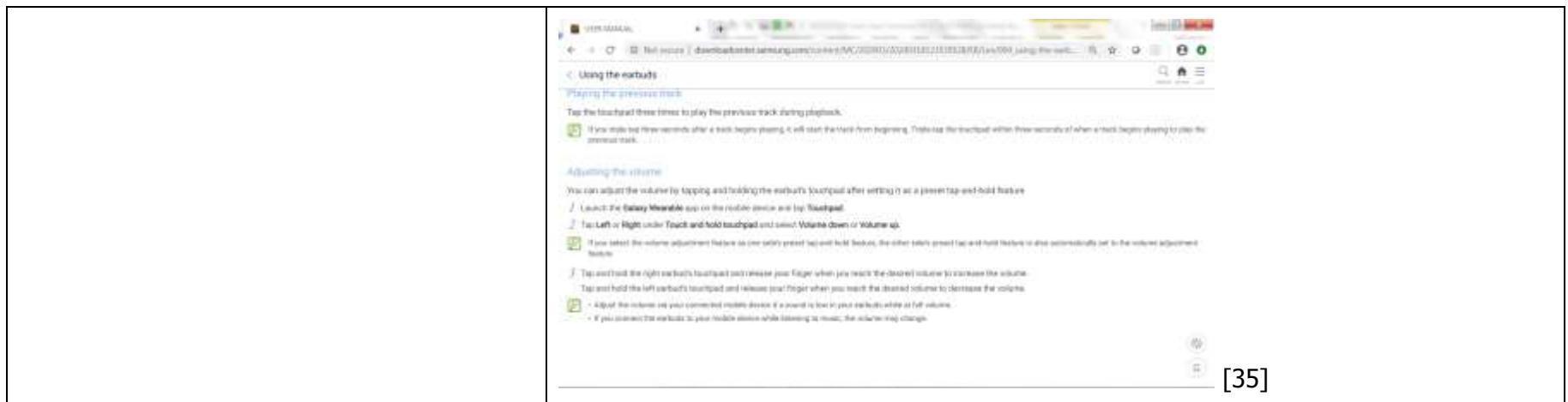
[33]

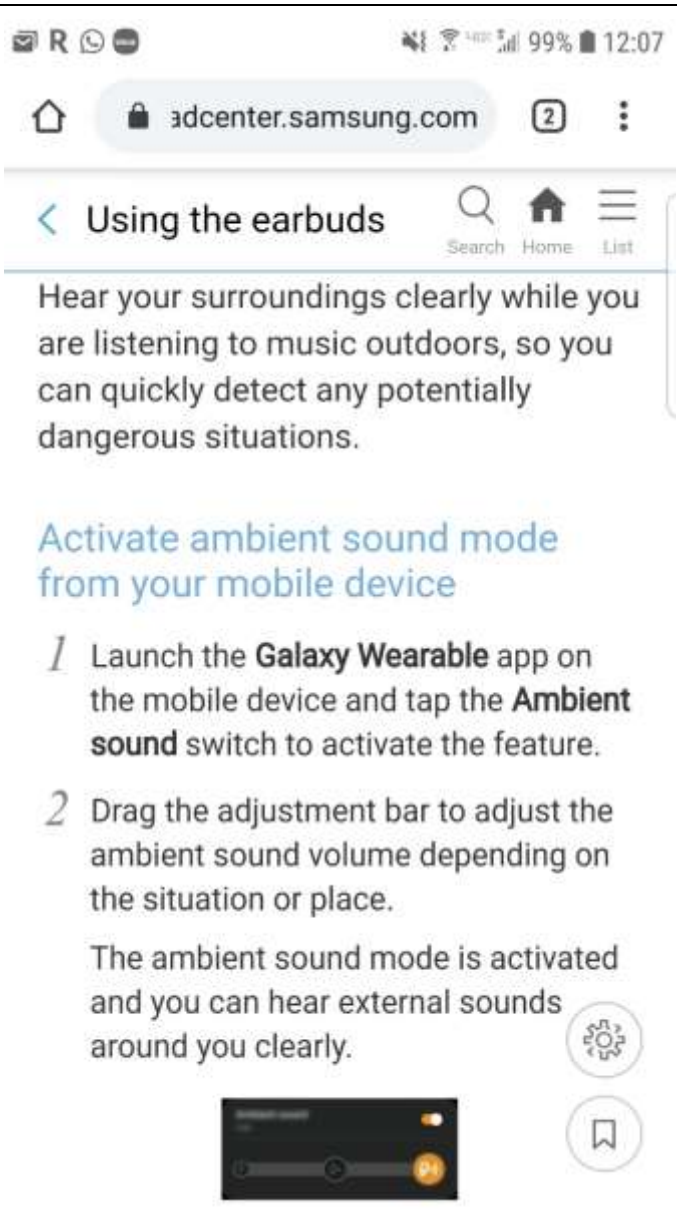
The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video).

[26]



[25]





The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows a home icon, a lock icon, and the URL 'adcenter.samsung.com'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and list. The main content area has a heading 'Using the earbuds' followed by a paragraph: 'Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.' Below this is a sub-heading 'Activate ambient sound mode from your mobile device'. A numbered list follows: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the list, a paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' At the bottom, there is a small image of a mobile device screen showing a slider control, and two circular icons (a gear and a bookmark) are visible on the right side.

Using the earbuds

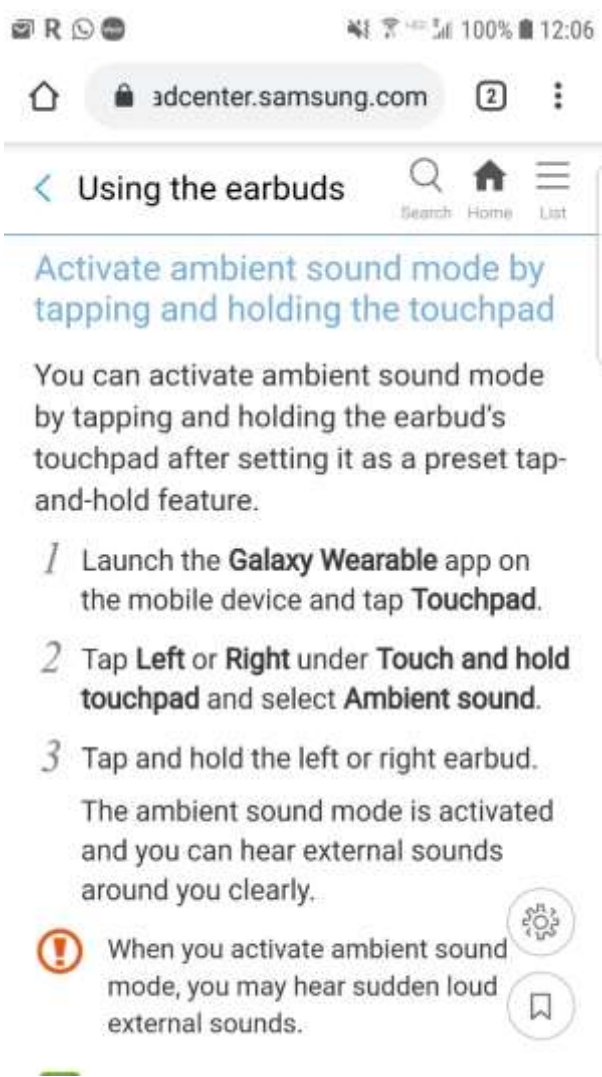

Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

Activate ambient sound mode from your mobile device

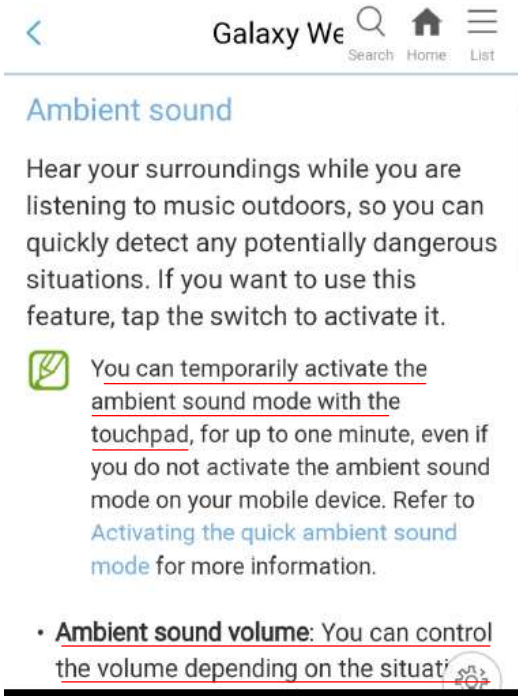

- 1 Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature.
- 2 Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place.

The ambient sound mode is activated and you can hear external sounds around you clearly.

[35]

	 <p>The screenshot shows a mobile browser interface with the URL <code>sdcenter.samsung.com</code>. The page title is "Using the earbuds". The main heading is "Activate ambient sound mode by tapping and holding the touchpad". The text explains that ambient sound mode can be activated by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature. The instructions are as follows:</p> <ol style="list-style-type: none"><li>1 Launch the <b>Galaxy Wearable</b> app on the mobile device and tap <b>Touchpad</b>.</li><li>2 Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b> and select <b>Ambient sound</b>.</li><li>3 Tap and hold the left or right earbud.</li></ol> <p>The ambient sound mode is activated and you can hear external sounds around you clearly.</p> <p> When you activate ambient sound mode, you may hear sudden loud external sounds.</p> <p>Navigation icons for Search, Home, and List are visible at the top right of the page content area.</p>
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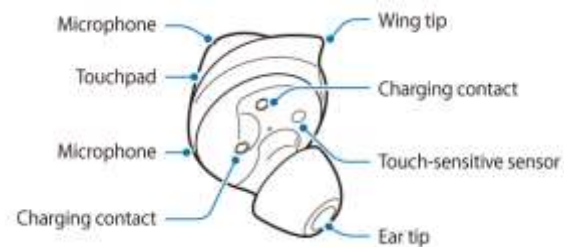
[35]

Claim 16	Evidence
<p><b>16.</b> The set of headphones of claim 10, wherein the second set of controls control the level of ambient noise played by the headphones.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control ambient noise played by the headphones:</p>  <p>[1]</p>  <p>[17]</p>



[17]

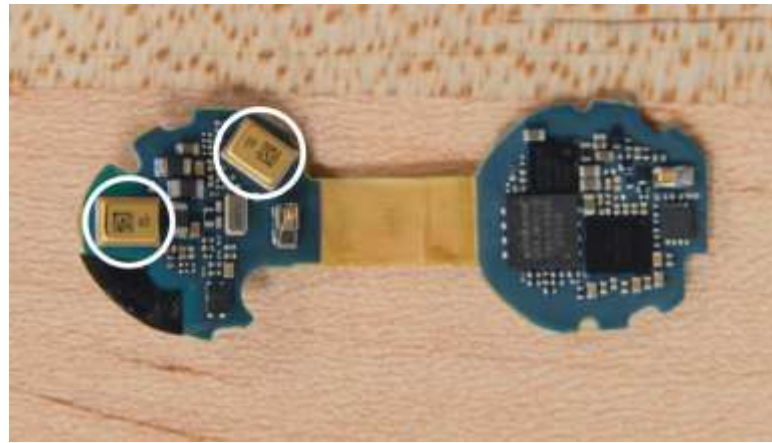
Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input to activate the ambient sound mode to control ambient noise played by the headphones:



[33]

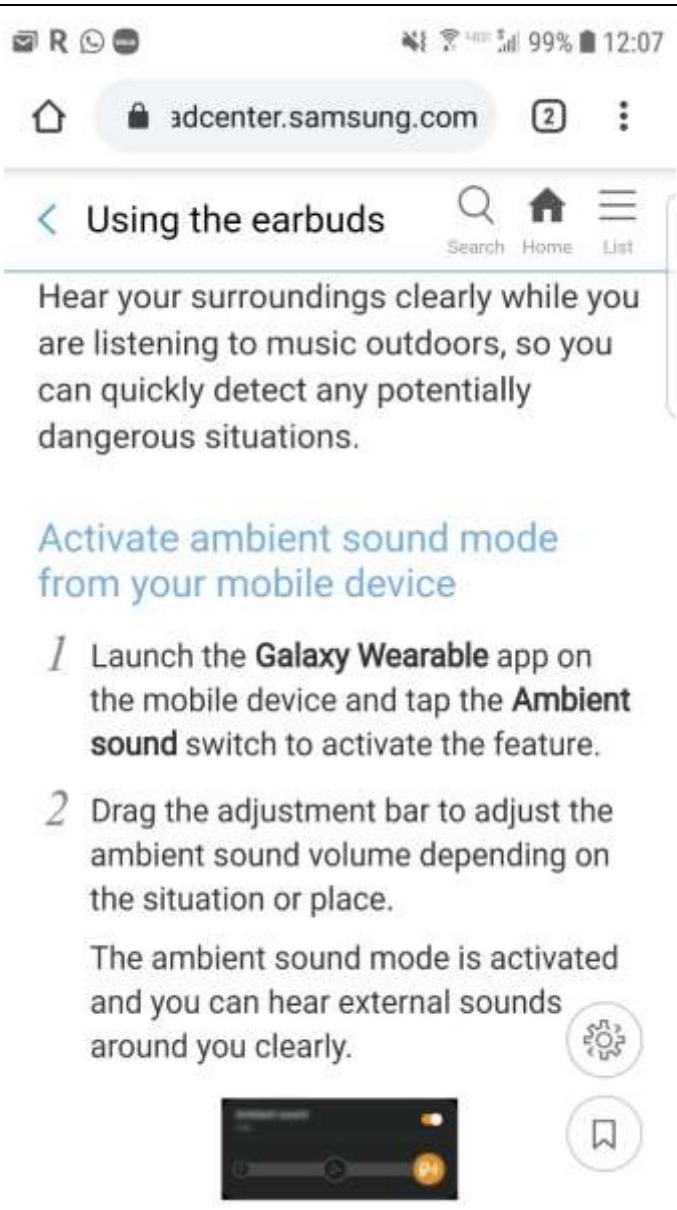


The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



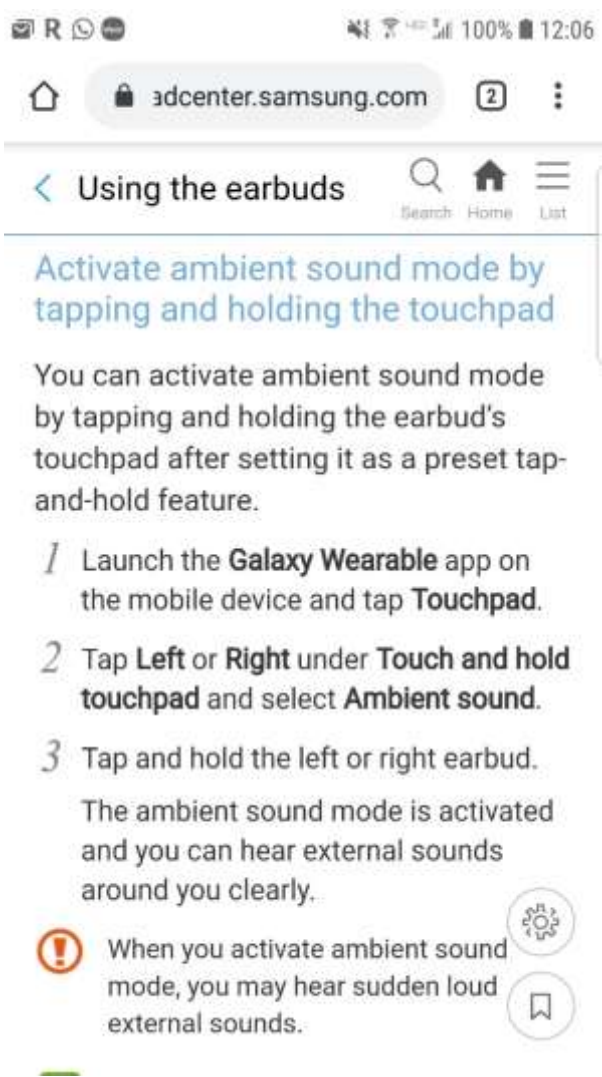
[25]






The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows a home icon, a lock icon, and the URL "adcenter.samsung.com". Below the address bar is a navigation bar with a back arrow, the title "Using the earbuds", and icons for search, home, and list. The main content area has a heading "Using the earbuds" and a paragraph: "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." Below this is a section titled "Activate ambient sound mode from your mobile device" in blue. It contains two numbered steps: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the steps, a paragraph states: "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom left, there is a small image of the Galaxy Wearable app interface showing a slider and a play button. To the right of the text, there are two circular icons: a gear icon and a bookmark icon.

[35]

	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The address bar shows 'sdcenter.samsung.com' with a lock icon and a tab indicator showing '2'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list. The main content area has a heading 'Activate ambient sound mode by tapping and holding the touchpad' in blue. Below this, a paragraph states: 'You can activate ambient sound mode by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature.' This is followed by a numbered list of three steps: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap <b>Touchpad</b>. 2. Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b> and select <b>Ambient sound</b>. 3. Tap and hold the left or right earbud. Below the list, a paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' To the right of this paragraph are two circular icons: a gear (settings) and a bookmark. An orange warning icon (exclamation mark in a circle) is positioned to the left of a paragraph that reads: 'When you activate ambient sound mode, you may hear sudden loud external sounds.'</p>
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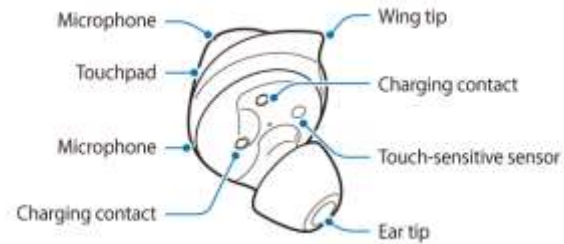
[35]

Claim 17	Evidence
<p><b>17.</b> The set of headphones of claim 9, wherein the headphones comprise a noise-canceling element.</p>	<p>Samsung Galaxy Buds comprise a set of headphones comprising a noise-canceling element:</p> <p><b>Adaptive Dual Microphone</b></p> <p><u>Galaxy Buds' noise-canceling capability extends beyond the listening experience. Featuring an Adaptive Dual Microphone, the wireless earbuds also minimize external noise in phone conversations.</u></p> <p>The Adaptive Dual Microphone combines signals from an inner and outer microphone. While the outer receiver detects audio in the surrounding area, the inner microphone picks up vibrations resonating inside the body. By processing and mixing the two sources, the Adaptive Dual Microphone produces an accurate representation of the user's voice. The microphones are further enhanced by SolomonVoice technology and Wind Noise Reduction capability to help Galaxy Buds deliver the user's voice clearly.</p> <p>[17]</p>  <p>[17]</p>



[17]

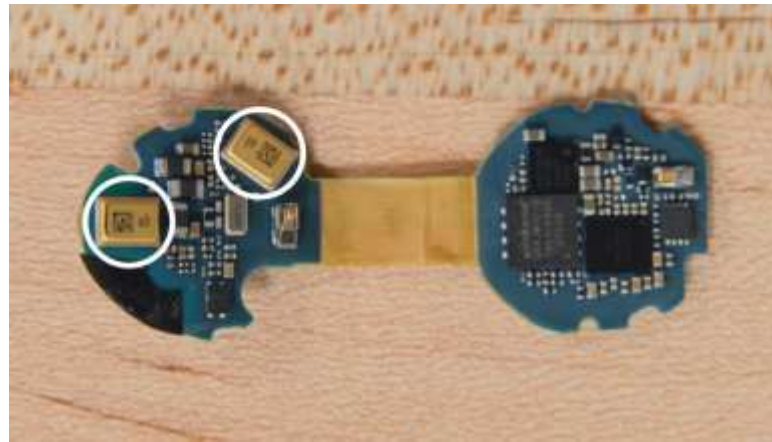
Samsung Galaxy Buds+ comprise a set of headphones comprising a noise-canceling element:



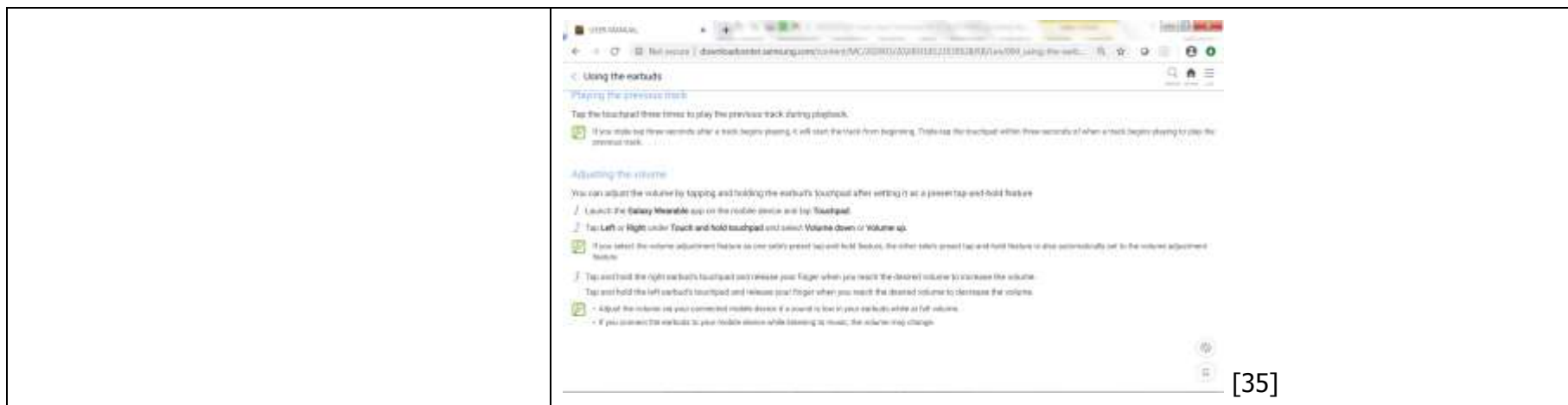
[33]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video).

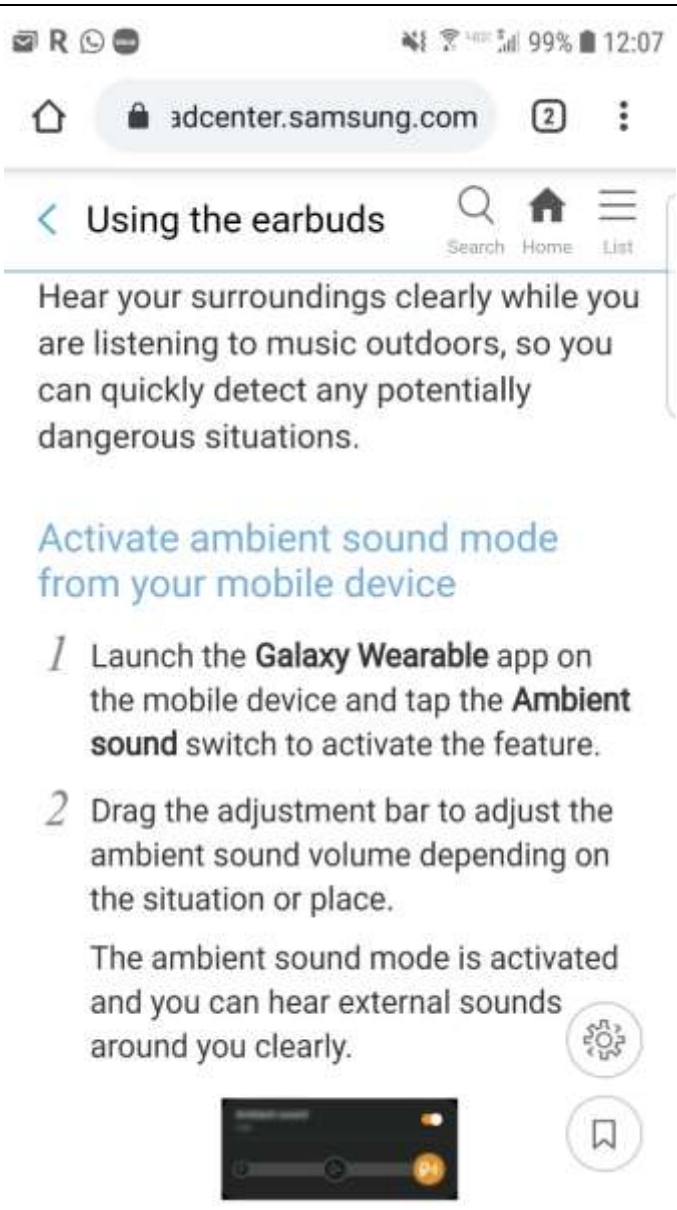
[26]



[25]







The screenshot shows the Samsung Ad Center mobile app interface. At the top, the status bar displays various icons and the time 12:07. The app's header shows the URL 'adcenter.samsung.com' and a search bar. The main content area is titled 'Using the earbuds' and contains a paragraph about hearing surroundings clearly. Below this, a section titled 'Activate ambient sound mode from your mobile device' provides two numbered steps: 1. Launch the Galaxy Wearable app and tap the Ambient sound switch. 2. Drag the adjustment bar to adjust the ambient sound volume. A small inset image shows the Galaxy Wearable app's ambient sound control interface. To the right of the text, there are three circular icons: a gear (settings), a bookmark, and a share icon.

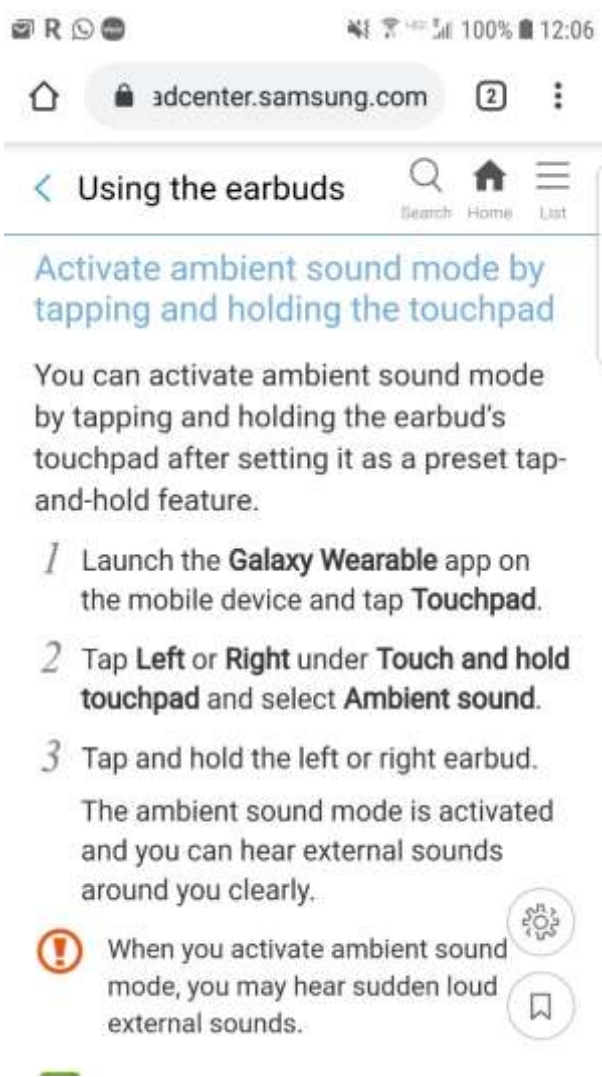
Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

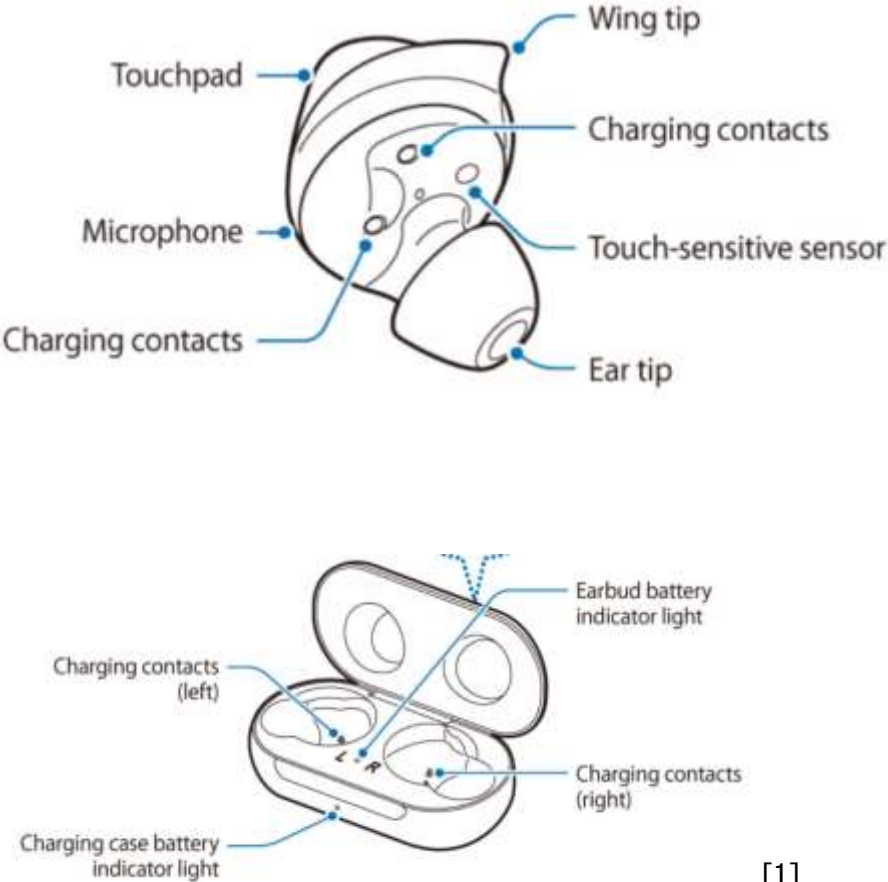
**Activate ambient sound mode from your mobile device**

- 1 Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature.
- 2 Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place.

The ambient sound mode is activated and you can hear external sounds around you clearly.

[35]

	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The address bar shows 'adcenter.samsung.com' with a lock icon and a tab indicator showing '2'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list menu. The main content area has a blue header 'Activate ambient sound mode by tapping and holding the touchpad'. Below this, a paragraph states: 'You can activate ambient sound mode by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature.' A numbered list follows: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap <b>Touchpad</b>. 2. Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b> and select <b>Ambient sound</b>. 3. Tap and hold the left or right earbud. Below the list, a paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' An orange warning icon is next to the text: 'When you activate ambient sound mode, you may hear sudden loud external sounds.' To the right of the text are two circular icons: a gear (settings) and a bookmark. A green horizontal line is at the bottom left of the content area.</p> <p>[35]</p>
--	--

Claim 18	Evidence
<p><b>18[pre].</b> A method of operating a set of headphones comprising:</p>	<p>The preamble is non-limiting. To the extent the preamble is determined to be limiting, Samsung Galaxy Buds headphones comprise a charging case with one or more magnetic surfaces:</p>  <p>[1]</p> <p>[1]</p>

### Galaxy Buds: Features

The buds' most iconic feature is their **wireless charging case**. The small, oval container **snaps the Galaxy Buds into place using tiny magnets** and can be placed on any Qi wireless charging mat to juice up. The S10's Wireless PowerShare lets users turn their smartphone into an extra wireless charger so that they can still charge Galaxy Buds on the go.

[2]

I used a paperclip to locate all 15 magnets in the case and buds (excluding the 2 driver magnets in the buds themselves).  
Interesting.

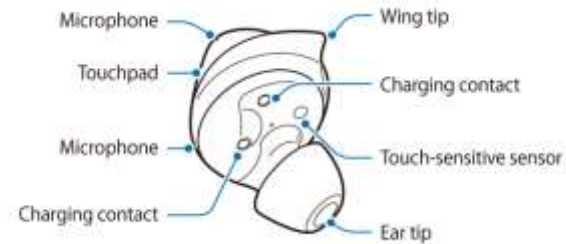
Uploaded Apr 12



[3]

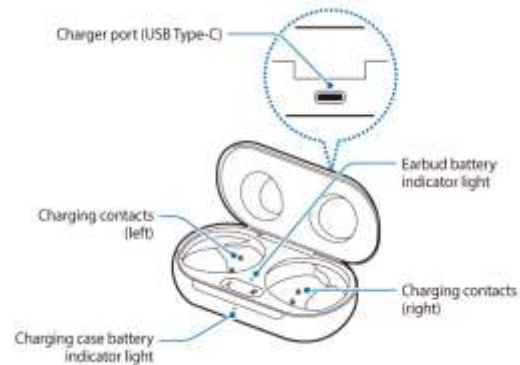
The preamble is non-limiting. To the extent the preamble is determined to be limiting, Samsung Galaxy Buds+ headphones comprise a charging case with one or more magnetic surfaces:

Samsung Galaxy Buds+ comprise earphones for playing audio:





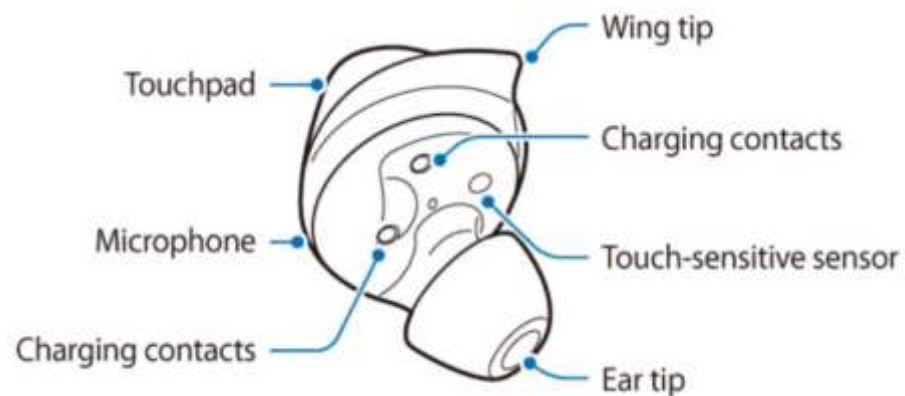
[33]

Samsung Galaxy Buds+ comprise a charging case with one or more magnetically attractable surfaces:



[33]

	 <p>[32]</p>  <p>[32]</p>
<p><b>18[a]</b> removably coupling a magnetic surface of the set of headphones to a magnetically attractable surface of a holder body,</p>	<p>Samsung Galaxy Buds comprise a set of headphones for removably coupling a magnetic surface of the set of headphones to a magnetically attractable surface of a holder body:</p>



[1]

### Galaxy Buds: Features

The buds' most iconic feature is their **wireless charging case**. The small, oval container **snaps the Galaxy Buds into place using tiny magnets** and can be placed on any Qi wireless charging mat to juice up. The S10's Wireless PowerShare lets users turn their smartphone into an extra wireless charger so that they can still charge Galaxy Buds on the go.

[2]

I used a paperclip to locate all 15 magnets in the case and buds (excluding the 2 driver magnets in the buds themselves).  
Interesting.

Uploaded Apr 12



[3]





采用多颗磁铁辅助耳机定位。

[23]

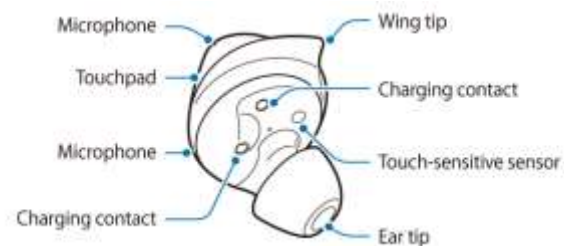
English Translation: Use multiple magnets to assist in headphone positioning



[23]

Samsung Galaxy Buds+ comprise a magnetic surface for coupling to a magnetically attractable surface of a holder body:

Samsung Galaxy Buds+ comprise earphones with a magnetic surface:



[33]

**Your device contains magnets**, which may affect medical devices, such as pacemakers or implantable cardioverter defibrillators. If you are using any of these medical devices, keep your device a safe distance from them and consult with your physician before you use the device. [33]

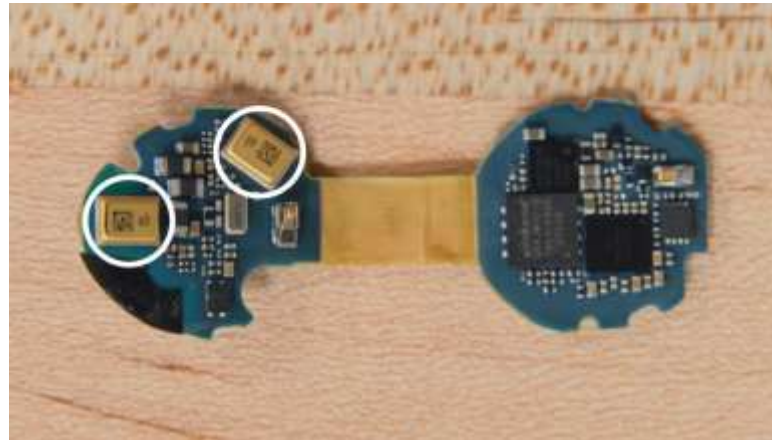


[25]



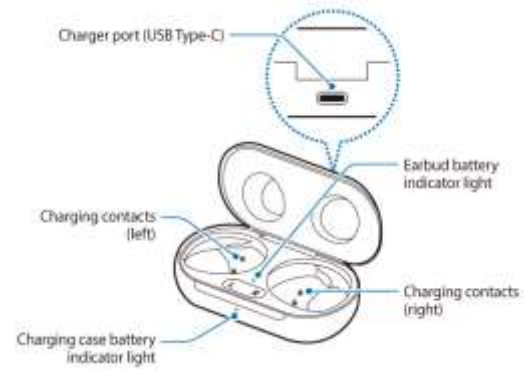
[25]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]

Samsung Galaxy Buds+ comprise a charging case with one or more magnetically attractable surfaces:



[33]



[32]



[32]

**18[b]** sending an activation signal to a controller when a magnetic decoupling is detected as the magnetic surface of the set of headphones is removed and decoupled from the magnetically attractable surface of the holder body, wherein the activation signal causes transmitted audio to be played in the headphones;

Samsung Galaxy Buds comprise a controller coupled to receive an activation signal when one or more of the magnetic surfaces in the set of earphones are decoupled from one of the magnetically attractable surfaces in the holder body:

### Broadcom Wireless Audio Chip Powers Samsung Galaxy Buds

Broadcom BCM43014 delivers premium Bluetooth sound and unmatched battery life in ultra-compact footprint

SAN JOSE, Calif., Feb. 28, 2019 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today unveiled the BCM43014 chip enabling the Samsung Galaxy Buds to deliver a premium audio experience. The BCM43014 is a highly-integrated low power SoC that brings together unique innovations in Bluetooth, audio DSP and sensor hub technology to render rich audio while delivering up to six hours of Bluetooth streaming or five hours of voice calls.

[4]

Built on Broadcom's unique combination of deep semiconductor expertise and wireless audio engineering, the BCM43014 is engineered to meet the design requirements for in-ear wireless devices. In addition to Bluetooth 5, the chip is packed with innovative features and capabilities that:



- Allows for seamless integration of advanced acoustic algorithms that reduce background noise to deliver rich sound.
- Delivers synchronized audio to both the earbuds for various daily user scenarios using Broadcom's InConcert® technology to create a truly wireless experience.
- Innovates with a holistic low power system-level design that spans radio design, protocol optimization and software techniques.
- Seamlessly connects both Buds with phone and quickly switches between devices with Broadcom's advanced Bluetooth pairing technology to deliver continuity of content for the consumer.
- Enables the integration of the multi-dimensional sensors behind the convenient and intuitive user interface on the Buds.
- Facilitates slim earbud design by integrating multiple audio components into a single chip and reducing the overall bill of materials.

[4]

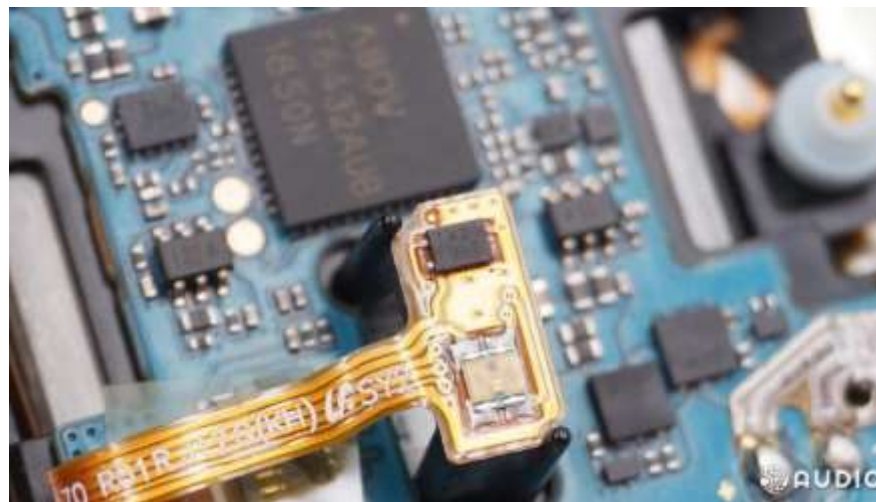
Galaxy Buds also comprise an ABOV F6432AUB Micro Controller Unit.



On information and belief, the ABOV F6432AUB and the controller and/or sensor hub of the BCM43014 System on Chip and are responsive to a magnetic Hall sensor:

	<div data-bbox="846 180 1045 204"><b>Dimensions &amp; Weight</b></div> <div data-bbox="856 269 940 354"></div> <div data-bbox="1312 237 1575 386"></div> <div data-bbox="846 428 930 451"><b>Ear Buds</b></div> <div data-bbox="846 467 1014 519"><p>17.5 x 22.5 x 19.2mm 5.6g</p></div> <div data-bbox="1312 428 1373 451"><b>Cradle</b></div> <div data-bbox="1312 467 1463 519"><p>70 x 38.8 x 26.5mm 39.6g</p></div> <div data-bbox="846 574 1020 609"><b>Performance</b></div> <div data-bbox="846 708 884 730"><b>AP</b></div> <div data-bbox="846 768 940 790"><p>BCM43014</p></div> <div data-bbox="840 872 1113 888"><p><small>Samsung Galaxy Buds - The Official Samsung Galaxy Site</small></p></div> <div data-bbox="900 907 961 928"><b>Sensor</b></div> <div data-bbox="900 963 1169 984"><p>Accelerometer, Proximity, Hall, Touch</p></div>
--	--

[5]



[14]

On information and belief, Galaxy Buds are compatible with Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e.

#### Compatibility

Samsung, other Android: Android 5.0 or higher & RAM 1.5GB above

[5]



# Quick pairing out of the box

Just pop open and pair. Galaxy Buds work right out of the box, connecting with your Galaxy devices in an instant via Bluetooth to get you up to the beat and well on your way. [1,2,3](#)

[6]



[15]

Galaxy Buds automatically connects to the user's smartphone when the case is open and disconnects when placed back in the case. With a simple touch on the surface of an earbud, users can play or pause the current song, or move onto the previous or next song. Users can even give orders or turn on and off certain features using voice command.

[15]

Also, Samsung Galaxy buds detect if one or more earbuds are decoupled from one or more of the magnetically attractable surfaces attached to the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnetically attractable surfaces attached to the holder body, the music stops automatically.

The Galaxy Buds will detect how many earbuds are in its case and will switch the sound output to mono or stereo based on how many earbuds are in the charging case. If you put both Galaxy Buds into the charging case, the music will stop automatically.



[24]

On information and belief, Galaxy Buds are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

**Android & iOS compatible**

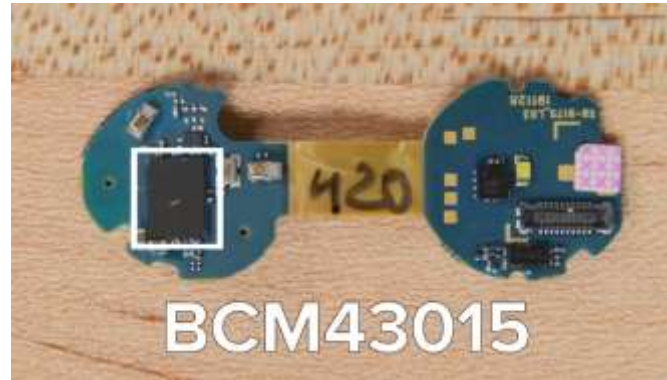
The Galaxy Buds pair with both  
Android and iOS compatible  
smartphones via Bluetooth  
connection.<sup>4</sup>

[7]

When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds earphones activate and begin playing audio when removed from the charging case.

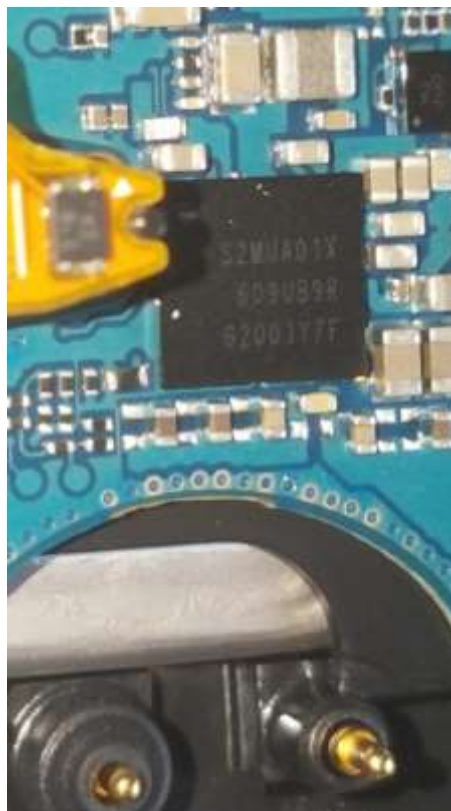
The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds earphones are deactivated and cannot play audio when in the holder.

Samsung Galaxy Buds+ comprise a controller coupled to receive an activation signal when one or more of the magnetic surfaces in the set of earphones are decoupled from one of the magnetically attractable surfaces in the holder body:



[25]

Galaxy Buds+ also comprise Samsung S2MUA01X chips. On information and belief, the S2MUA01X chips include a controller unit.



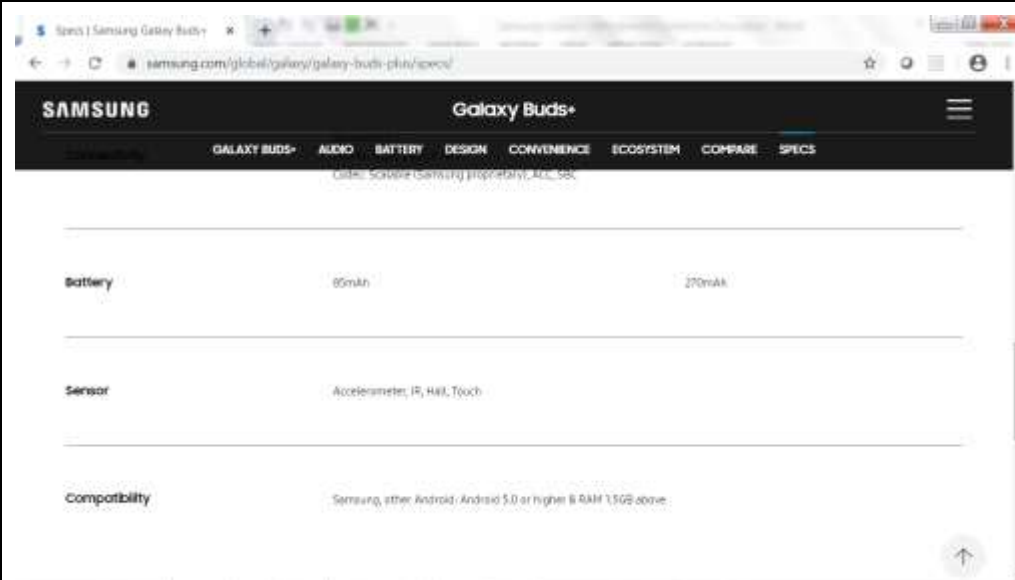
[32]

On information and belief, BCM43015 System on Chip includes a control unit and a sensor hub. On information and belief, the Samsung S2MUA01X chips and the control unit and/or sensor hub of the BCM43015 System on Chip are responsive to a magnetic Hall sensor:

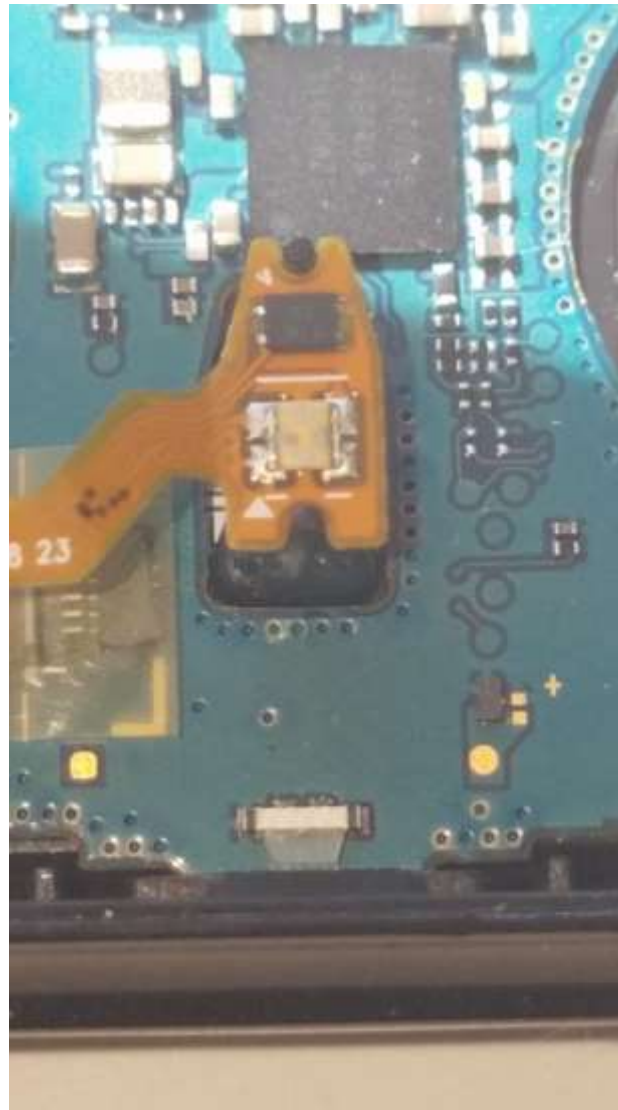
The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]



[31]



[32]



Also, Samsung Galaxy Buds+ detect if one or more earbuds are decoupled from one or more of the magnets comprising the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnets comprising the holder body, the audio stops.

The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds+ earphones are deactivated and cannot play audio when in the holder.

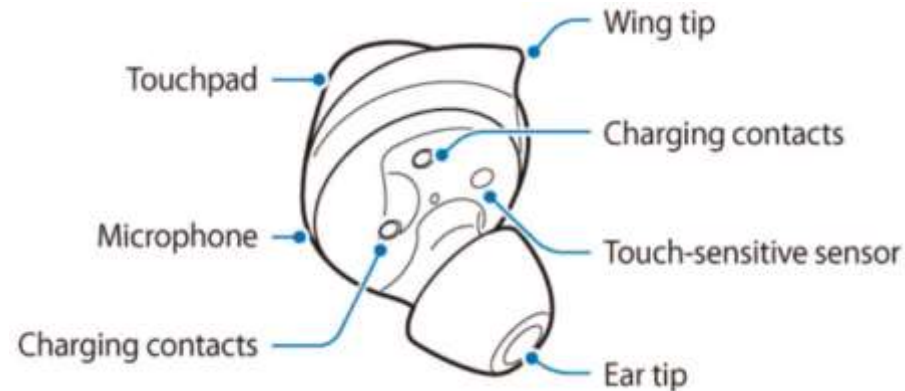
Galaxy Buds+ are compatible with smartphones and tablets running Android 5.0 or higher, including without limitation Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, Galaxy S10e, S20, S20+ and S20 Ultra 5G.

In addition, Galaxy Buds+ are compatible with iPhone7 or later models with iOS10 or higher.

<sup>10</sup> Compatible with smartphones and tablet running Android 5.0 or higher and with more than 1.5GB of RAM. Also compatible with iPhone7 or later models with the iOS 10 or higher. [34]

**18[c]** receiving the transmitted audio from an electronic device;

Samsung Galaxy Buds comprise a set of headphones for receiving the transmitted audio from an electronic device:



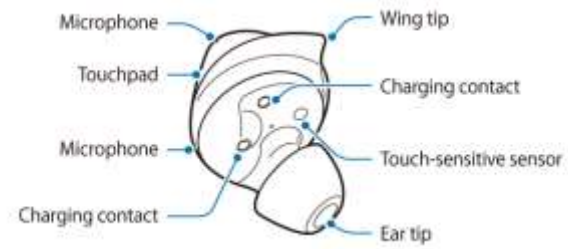
[1]

## Perfectly paired

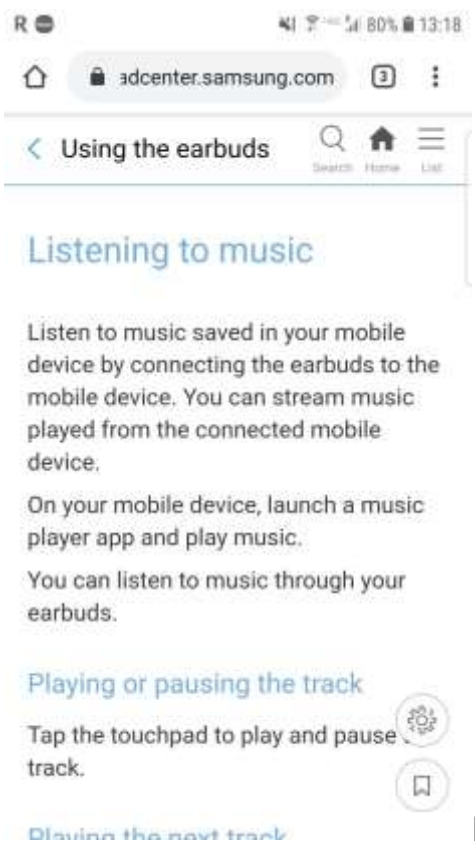
Pair Samsung Galaxy Buds with your phone or tablet and go. Listen and chat during the day, then wirelessly recharge for 15 minutes to get up to 1.7 more hours of play time. With sound by AKG, Galaxy Buds deliver calls, your favorite podcasts and the music you love while keeping you aware of your surroundings when walking, working or working out.

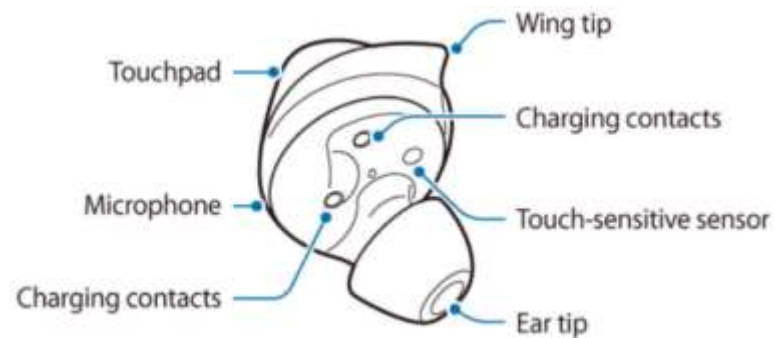
[16]

Samsung Galaxy Buds+ comprise a set of headphones for receiving the transmitted audio from an electronic device:



[33]

	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays 'R', signal strength, Wi-Fi, 80% battery, and 13:18. The address bar shows 'adcenter.samsung.com'. Below the address bar is a navigation bar with a back arrow, 'Using the earbuds', and icons for Search, Home, and List. The main content area has a heading 'Listening to music' followed by text: 'Listen to music saved in your mobile device by connecting the earbuds to the mobile device. You can stream music played from the connected mobile device.' Below this is another section titled 'Playing or pausing the track' with text: 'Tap the touchpad to play and pause track.' To the right of this text are two circular icons: a settings gear and a bookmark icon. A third section titled 'Playing the next track' is partially visible at the bottom. The number '[35]' is located to the right of the 'Playing the next track' section.</p>
<p><b>18[d]</b> receiving external audio from a microphone of the headphones; and</p>	<p>Samsung Galaxy Buds comprise a set of headphones for receiving external audio:</p>



[1]



- **Ambient sound volume:** You can control the volume depending on the situat

[1]

“Samsung insists that the Galaxy Buds are for talking just as much as they are for listening. Thanks to so-called ‘dual adaptive microphones,’ one on the inside and one on the outside of each earbud, the company says the person on the other end of your calls will hear you more clearly. That's because the earbuds can pick up on your surroundings and automatically switch between the two sets of mics to reduce background noise for whoever you're talking to.”[8]

### **Adaptive Dual Microphone**

Galaxy Buds' noise-canceling capability extends beyond the listening experience. Featuring an Adaptive Dual Microphone, the wireless earbuds also minimize external noise in phone conversations.

The Adaptive Dual Microphone combines signals from an inner and outer microphone. While the outer receiver detects audio in the surrounding area, the inner microphone picks up vibrations resonating inside the body. By processing and mixing the two sources, the Adaptive Dual Microphone produces an accurate representation of the user's voice. The microphones are further enhanced by SolomonVoice technology and Wind Noise Reduction capability to help Galaxy Buds deliver the user's voice clearly.

[17]

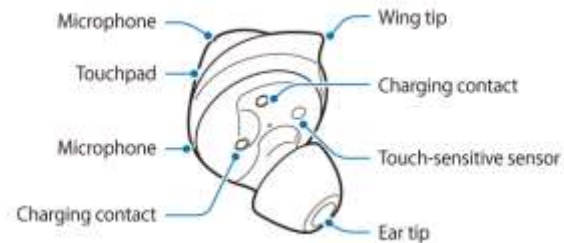


[17]



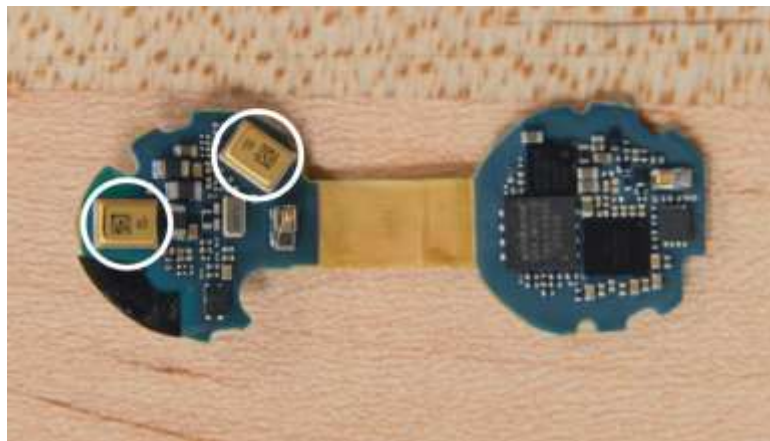
[17]

Samsung Galaxy Buds+ comprise a set of headphones for receiving external audio:



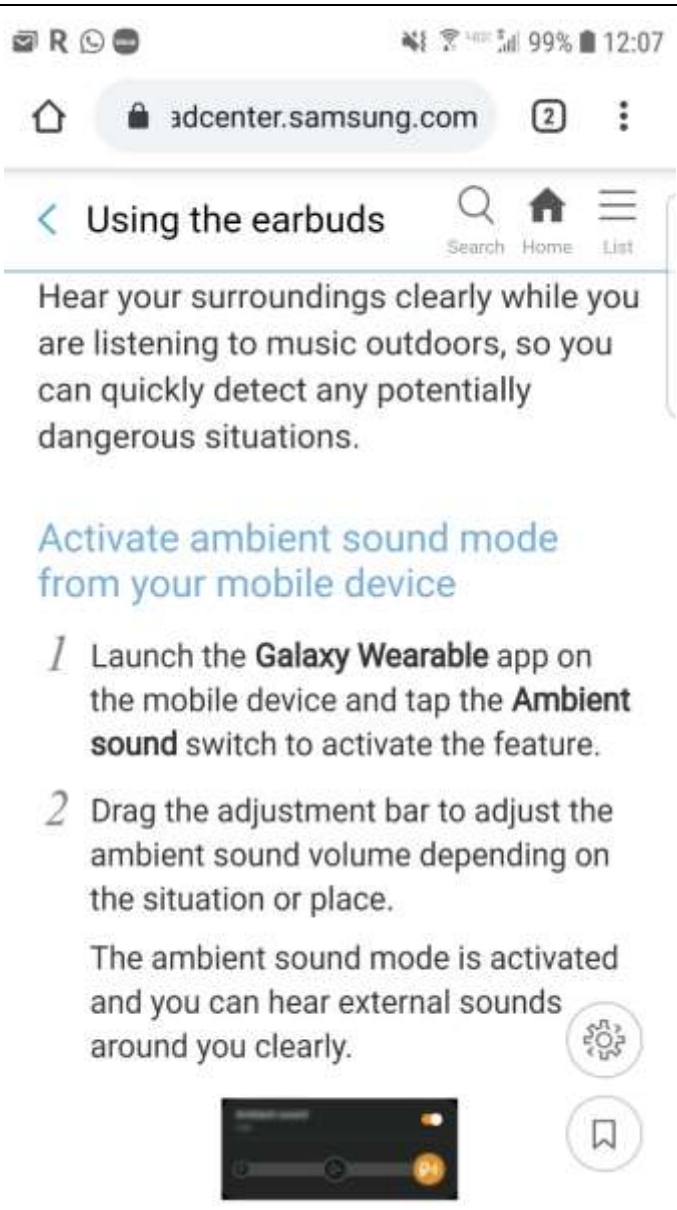
[33]

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



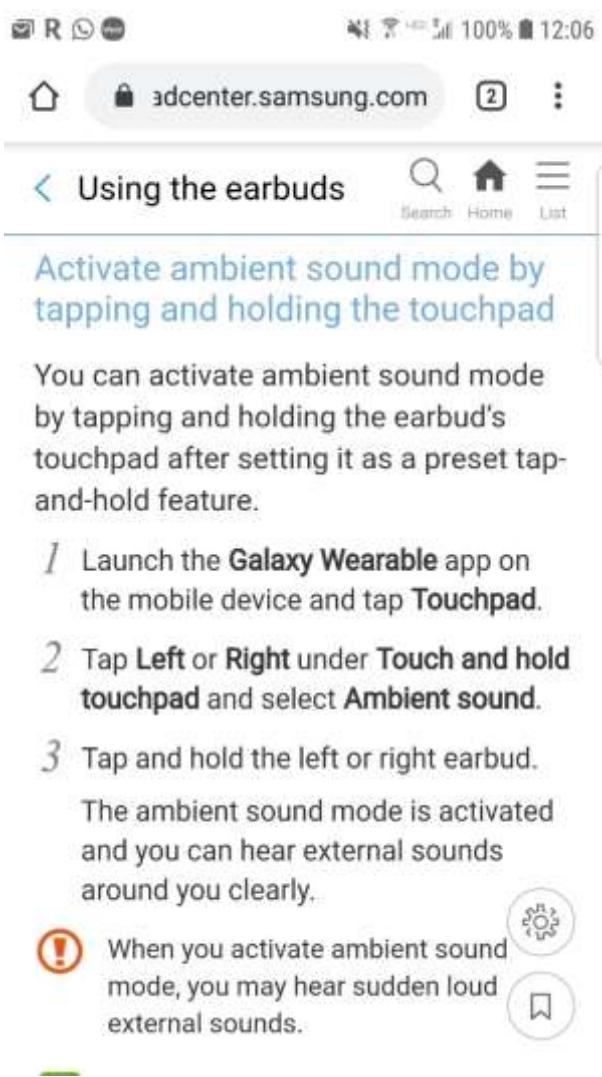
[25]





The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, clock, and battery, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows the URL 'adcenter.samsung.com'. Below the address bar, the page title is 'Using the earbuds'. The main content area features a paragraph: 'Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.' This is followed by a section titled 'Activate ambient sound mode from your mobile device'. Below this title are two numbered steps: 1. 'Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature.' 2. 'Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place.' Below the steps, a paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' At the bottom left, there is a small image of a mobile device screen showing a slider control. To the right of the text, there are two circular icons: a gear icon and a bookmark icon.

[35]

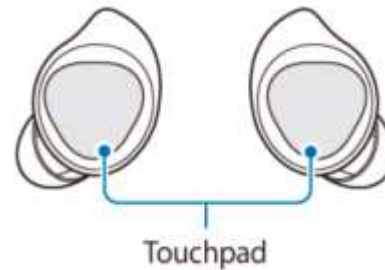
	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The address bar shows the URL 'sdcenter.samsung.com'. Below the address bar, there's a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list. The main content area has a heading 'Activate ambient sound mode by tapping and holding the touchpad' in blue. Below this, a paragraph explains that ambient sound mode can be activated by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature. A numbered list follows: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap <b>Touchpad</b>. 2. Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b> and select <b>Ambient sound</b>. 3. Tap and hold the left or right earbud. Below the list, a paragraph states that the ambient sound mode is activated and external sounds are heard clearly. A warning icon (exclamation mark in a circle) is followed by the text: 'When you activate ambient sound mode, you may hear sudden loud external sounds.' To the right of the warning text are two circular icons: a gear (settings) and a bookmark. A green horizontal line is at the bottom left of the content area.</p> <p>[35]</p>
--	---

**18[e].** adjusting a volume level of one of the transmitted audio and the external audio.

Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input for controlling the volume of the transmitted audio played by the headphones:

### Using the touchpad

You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.



[1]

### Tap and hold

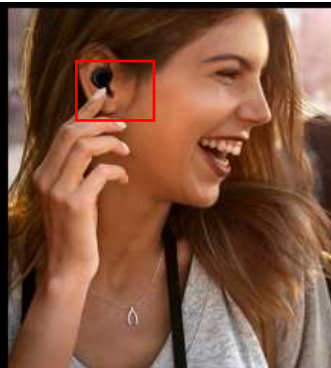
- Activate a preset feature. [1]

#### Setting a preset tap-and-hold feature

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command:** Start a conversation with Bixby.
  - **Quick ambient sound:** Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up:** Adjust the volume.

[1]

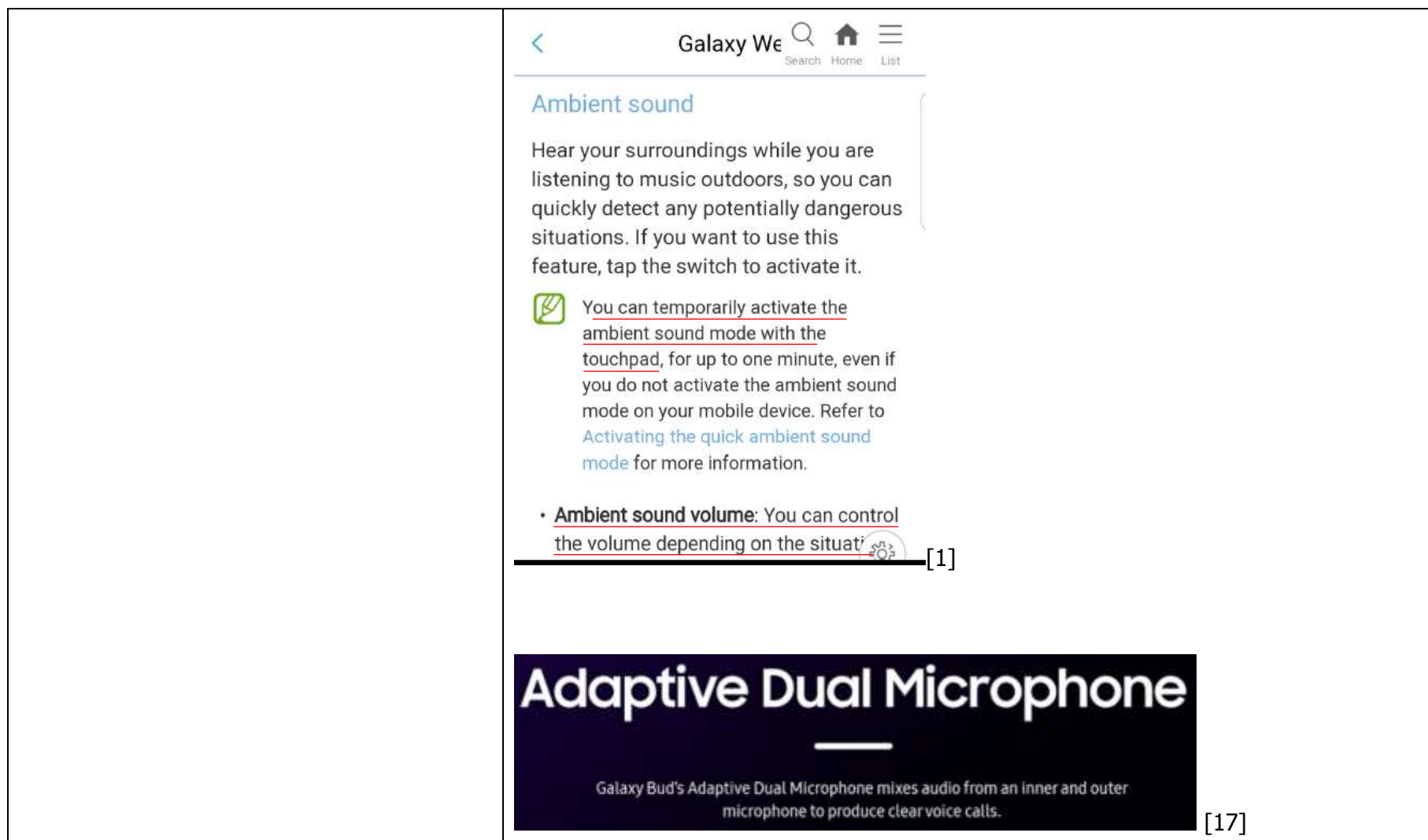


### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

[16]

Samsung Galaxy Buds comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

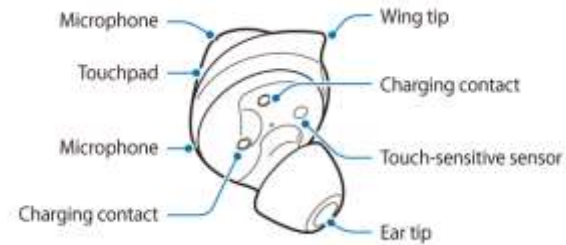




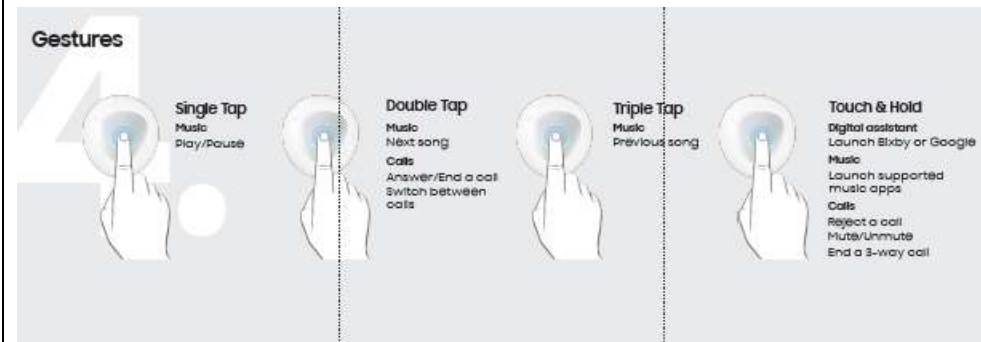
[17]

Moreover, Samsung Galaxy Buds allow control of volume through controls on a connected device.

Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input for controlling the volume of the transmitted audio played by the headphones:



[33]

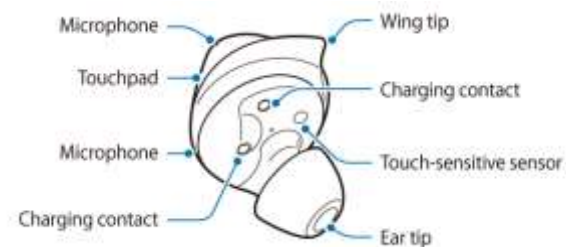


[30]



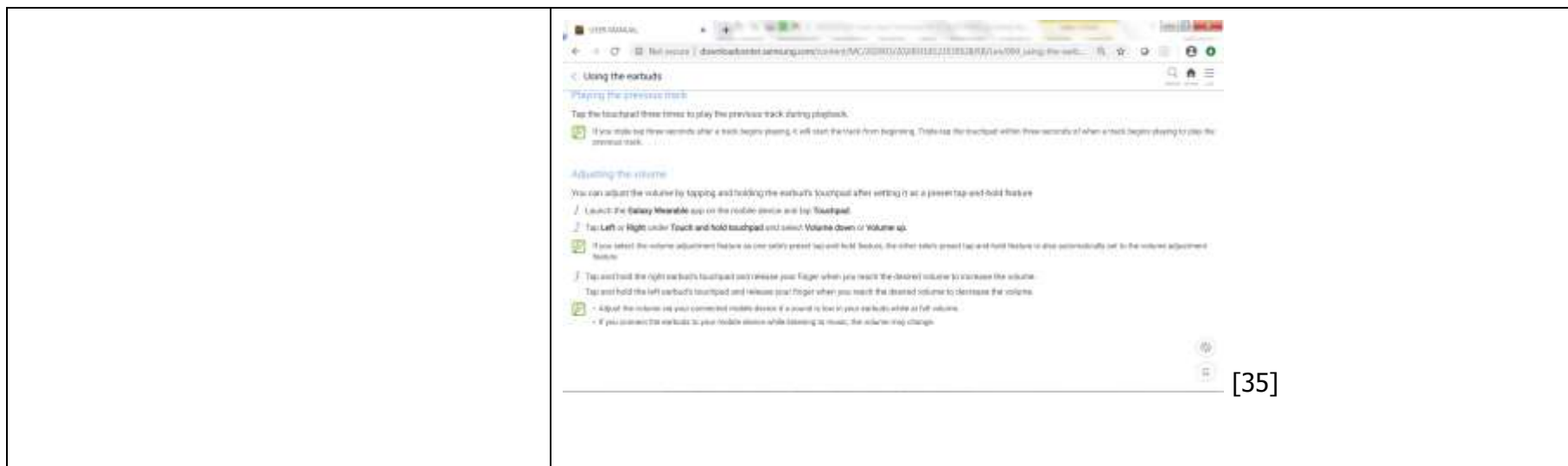
Moreover, Samsung Galaxy Buds+ allow control of volume through controls on a connected device.

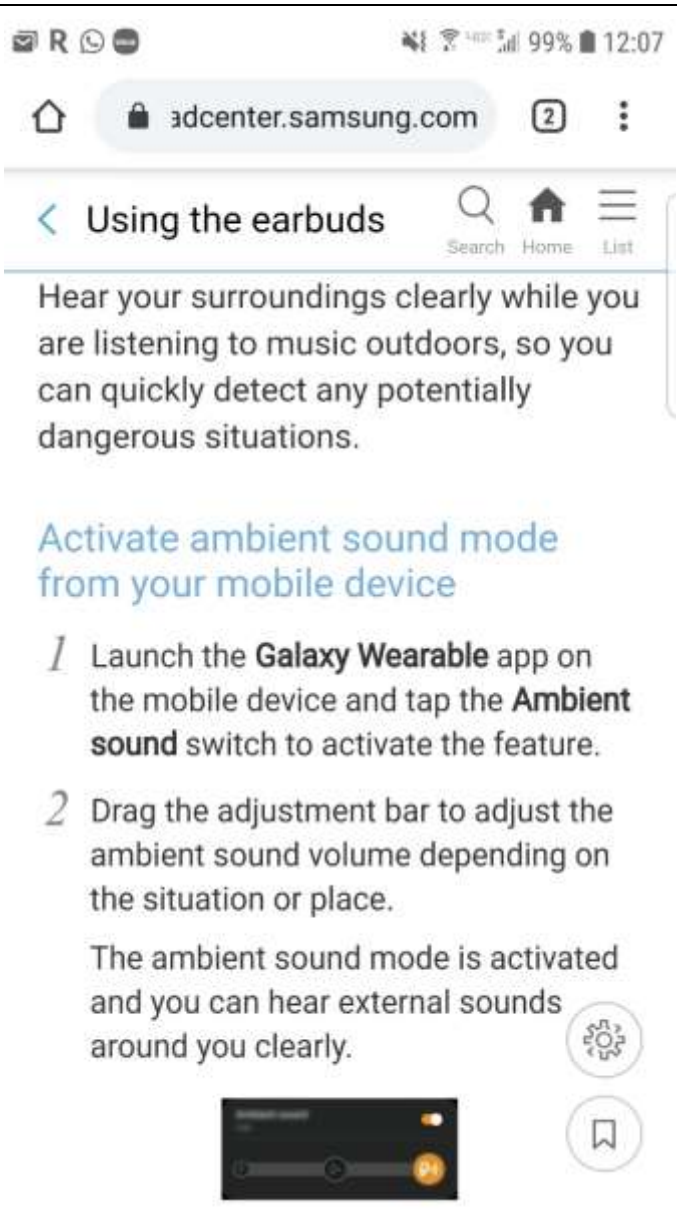
Samsung Galaxy Buds+ comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



[33]

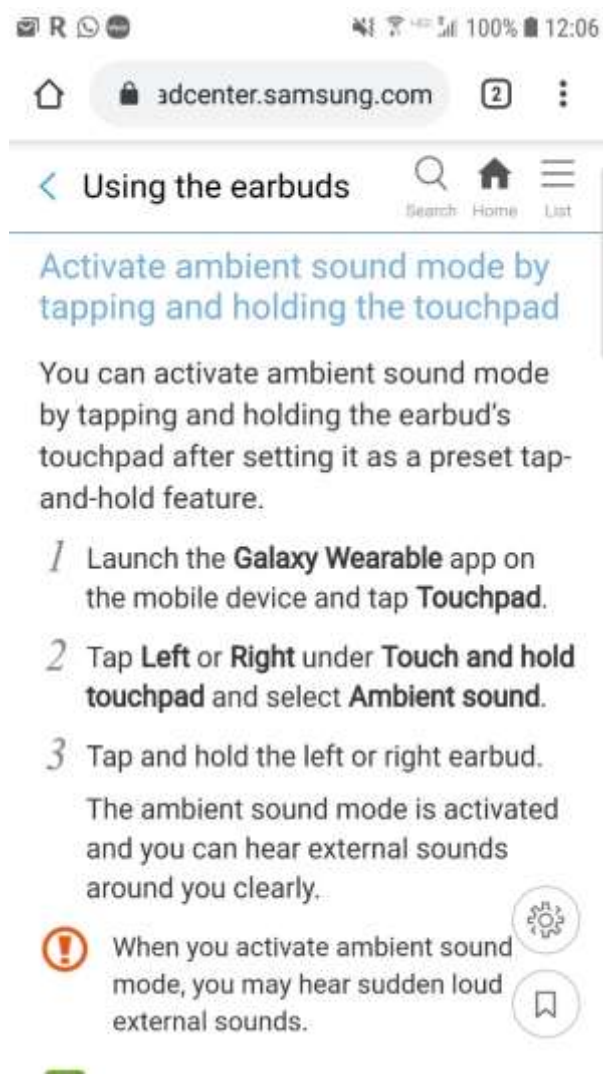






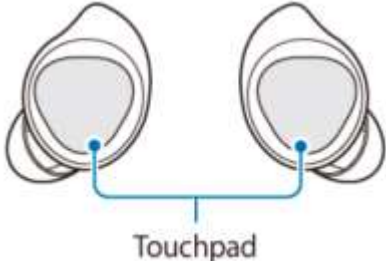
The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows the URL 'adcenter.samsung.com'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list. The main content area has a heading 'Using the earbuds' followed by a paragraph: 'Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.' Below this is a sub-heading 'Activate ambient sound mode from your mobile device'. A numbered list follows: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the list, a paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' At the bottom, there is a small image of a mobile device screen showing a slider control, and two circular icons: a gear (settings) and a bookmark.

[35]



[35]

Moreover, Samsung Galaxy Buds+ allow control of volume of ambient noise through controls on a connected device.

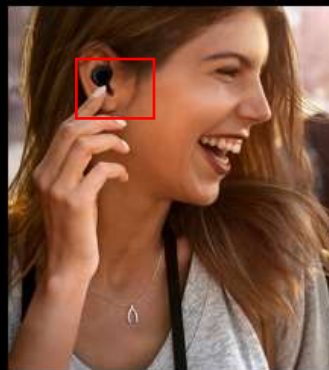
Claim 19	Evidence
<p><b>19.</b> The method of claim 18, wherein a first set of controls control the volume of transmitted audio played by the headphones and a second set of controls control the volume of external audio played by the headphones.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input for controlling a volume of the transmitted audio played by the headphones:</p> <p><b>Using the touchpad</b></p> <p>You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.</p>  <p>[1]</p> <p><b><u>Tap and hold</u></b></p> <ul style="list-style-type: none"><li>▪ <u>Activate a preset feature.</u> [1]</li></ul>

### Setting a preset tap-and-hold feature

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

- 1 Launch the **Galaxy Wearable** app on the mobile device.
- 2 Tap **Touchpad**.
- 3 Tap **Left** or **Right** under **Touch and hold touchpad**.
- 4 Select a feature that you want to use as a preset tap-and-hold feature.
  - **Voice command**: Start a conversation with Bixby.
  - **Quick ambient sound**: Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
  - **Volume down/Volume up**: Adjust the volume.

[1]

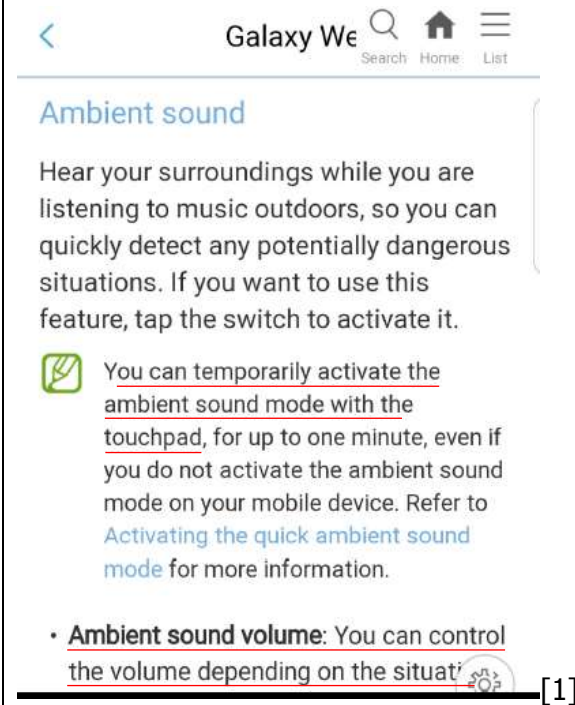


### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

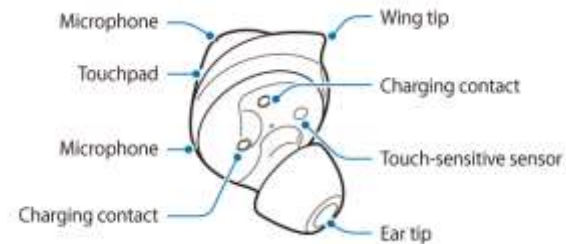
[16]

Samsung Galaxy Buds comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

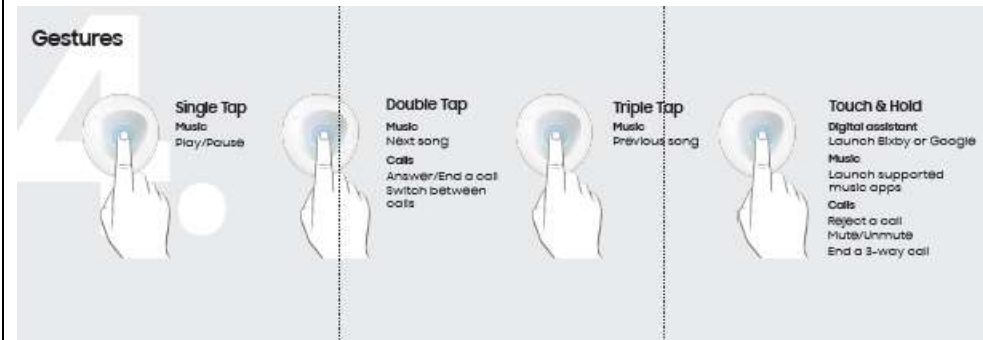


Moreover, Samsung Galaxy Buds allow control of volume through controls on a connected device.

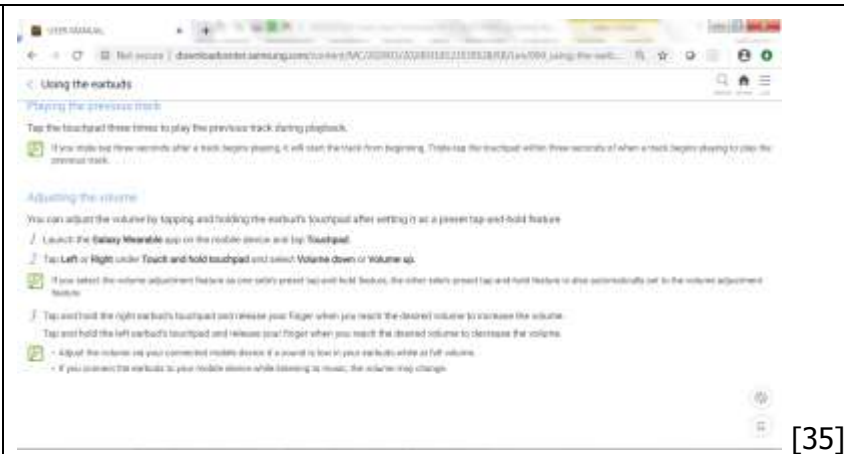
Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input for controlling a volume of the transmitted audio played by the headphones:



[33]



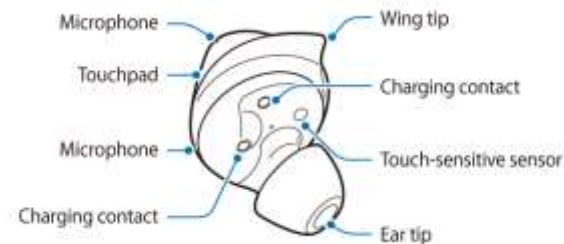
[30]



Samsung Galaxy Buds+ comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

Moreover, Samsung Galaxy Buds+ allow control of volume through controls on a connected device.

Samsung Galaxy Buds comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

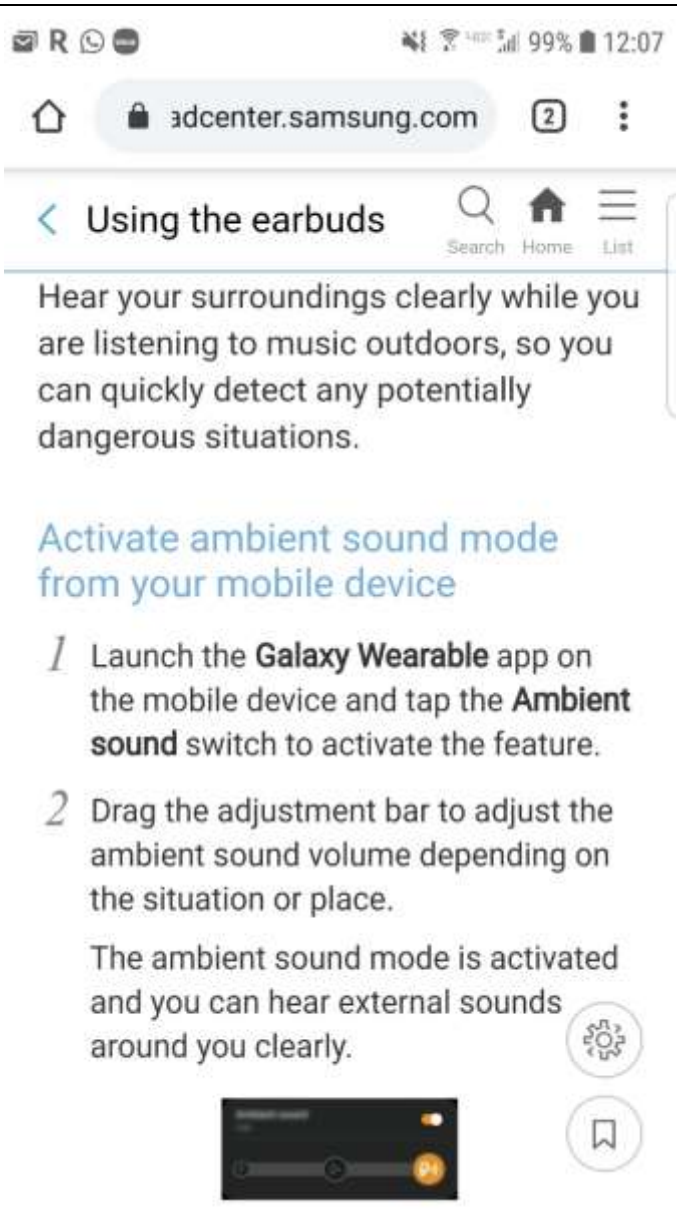


[33]



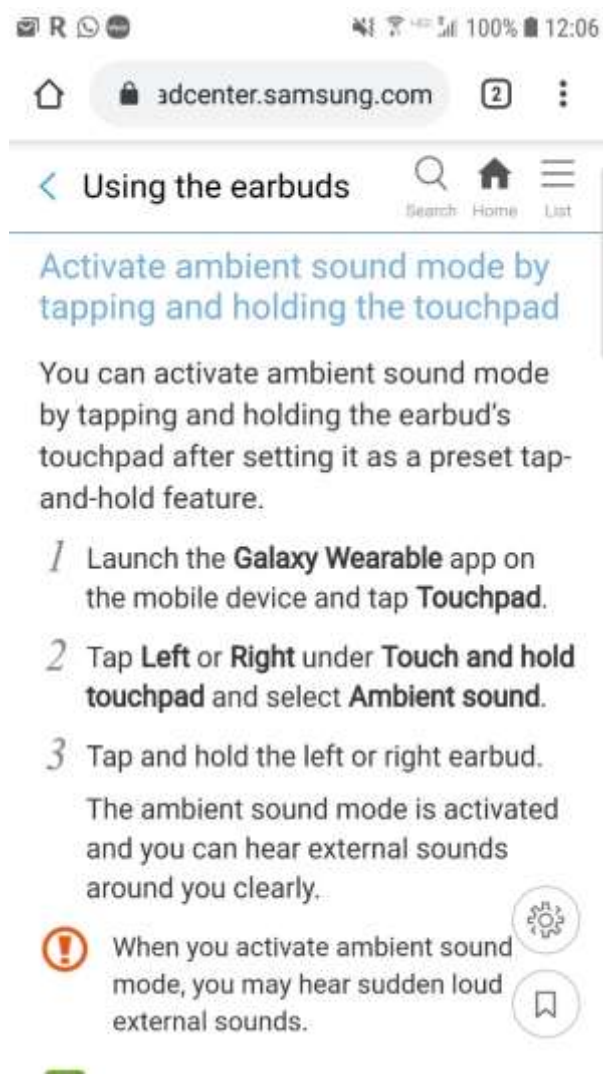


[35]



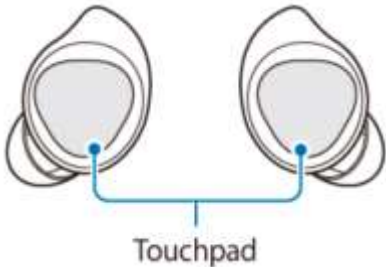
The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows the URL [adcenter.samsung.com](https://adcenter.samsung.com). Below the address bar, the page title is "Using the earbuds". The main content area features a paragraph: "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." This is followed by a section titled "Activate ambient sound mode from your mobile device". Below this title are two numbered steps: 1. "Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature." 2. "Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place." Below the steps, a paragraph states: "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom of the page, there is a small image of the Galaxy Wearable app interface showing a slider and a play button. To the right of the text, there are two circular icons: a gear icon and a bookmark icon.

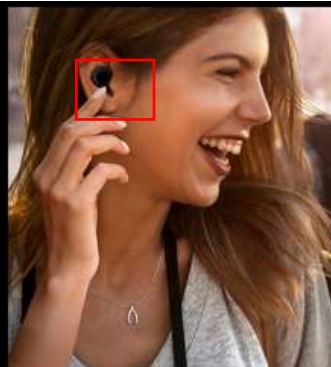
[35]



[35]

Moreover, Samsung Galaxy Buds+ allow control of volume of ambient noise through controls on a connected device.

Claim 20	Evidence
<p><b>20.</b> The method of claim 19, wherein the first set of controls and the second set of controls comprise touch sensitive controls.</p>	<p>Samsung Galaxy Buds comprise a set of headphones with a touchpad for receiving the user input for controlling a volume of the transmitted audio played by the headphones:</p> <p><b>Using the touchpad</b></p> <p>You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.</p>  <p>[1]</p> <p><b><u>Tap and hold</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>Activate a preset feature.</u></b> [1]</li> </ul> <p><b>Setting a preset tap-and-hold feature</b></p> <p>You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.</p> <ol style="list-style-type: none"> <li>1 Launch the <b>Galaxy Wearable</b> app on the mobile device.</li> <li>2 Tap <b>Touchpad</b>.</li> <li>3 Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b>.</li> <li>4 Select a feature that you want to use as a preset tap-and-hold feature. <ul style="list-style-type: none"> <li>• <b>Voice command:</b> Start a conversation with Bixby.</li> <li>• <b>Quick ambient sound:</b> Temporarily hear external sounds around you for up to one minute while decreasing the music volume.</li> <li>• <b><u>Volume down/Volume up:</u></b> Adjust the volume.</li> </ul> </li> </ol> <p>[1]</p>



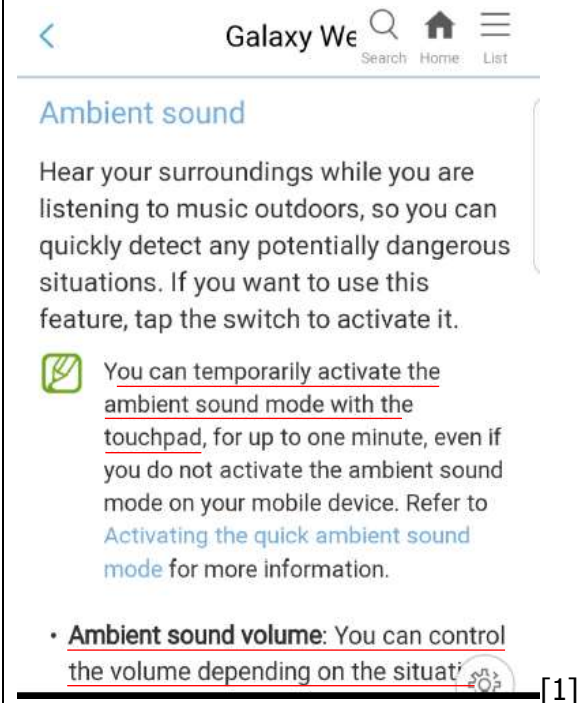
### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

[16]

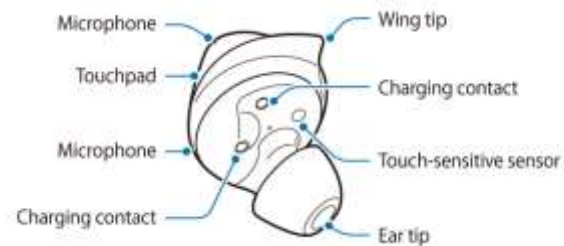
Moreover, Samsung Galaxy Buds allow control of volume of ambient noise through touch sensitive controls on a connected device.

Samsung Galaxy Buds comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

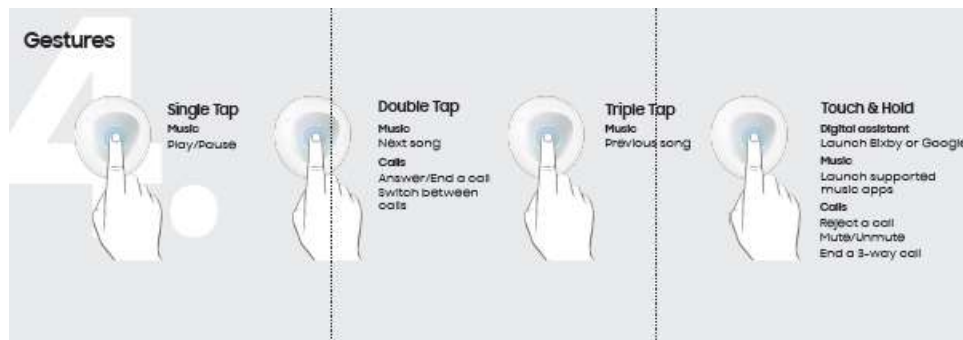


Moreover, Samsung Galaxy Buds allow control of volume of ambient noise through touch sensitive controls on a connected device.

Samsung Galaxy Buds+ comprise a set of headphones with a touchpad for receiving the user input for controlling a volume of the transmitted audio played by the headphones:



[33]

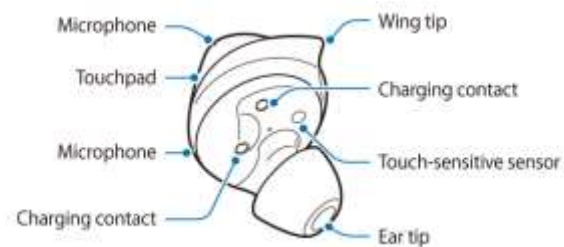


[30]



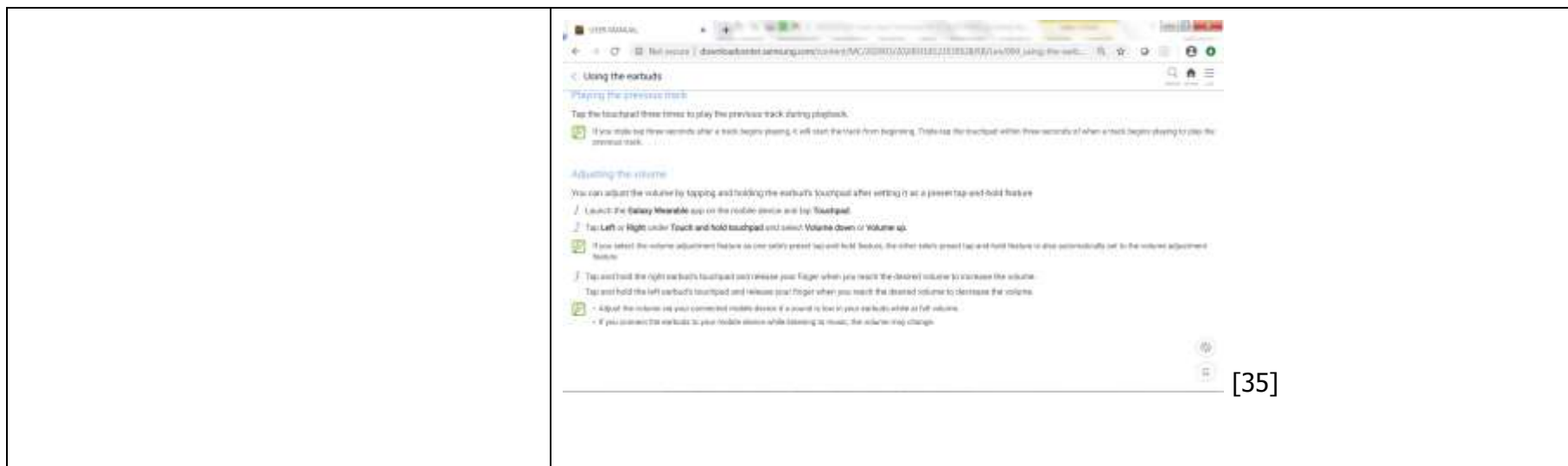
Moreover, Samsung Galaxy Buds+ allow control of volume through controls on a connected device.

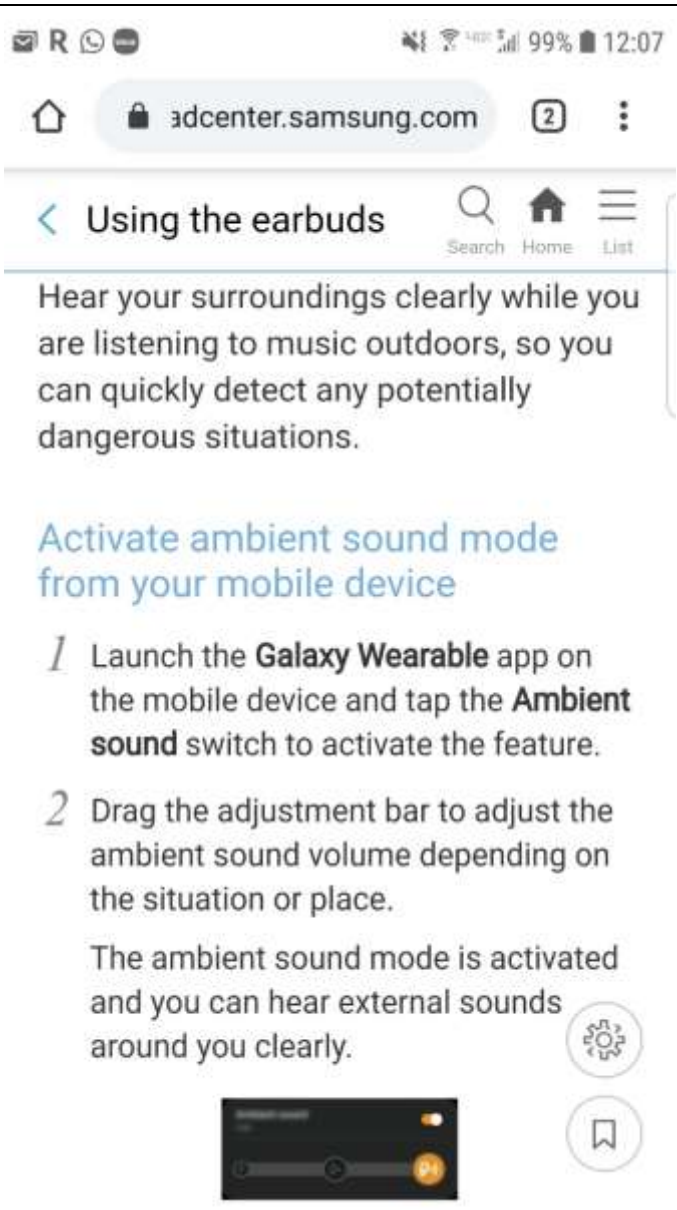
Samsung Galaxy Buds comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



[33]

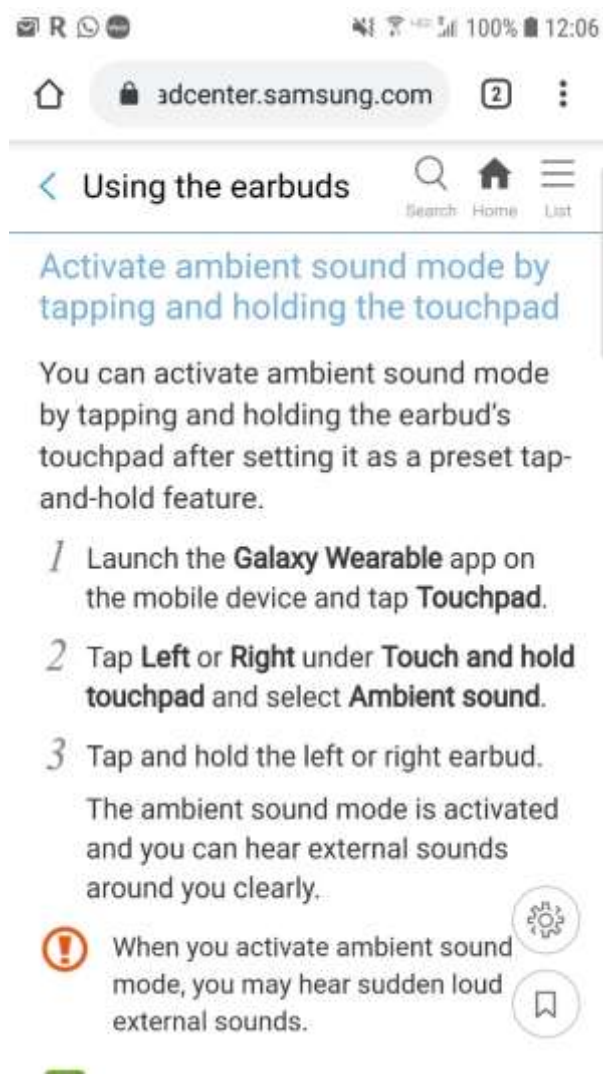






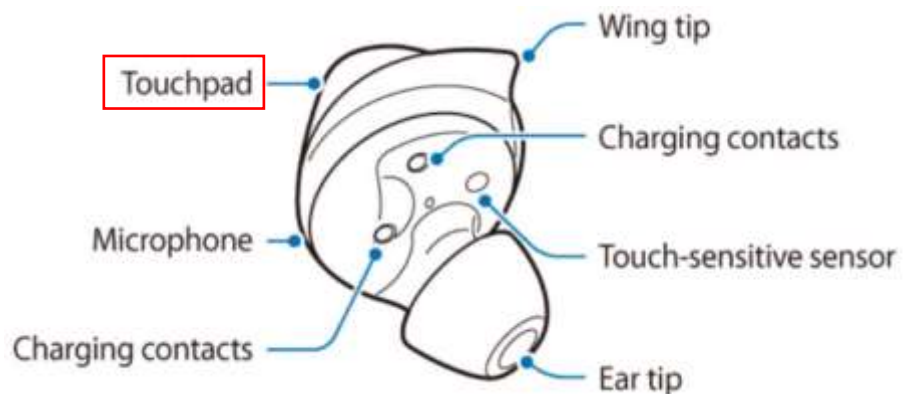
The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery icon, along with signal strength, Wi-Fi, and 99% battery at 12:07. The address bar shows a home icon, a lock icon, and the URL 'adcenter.samsung.com'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and list. The main content area has a heading 'Using the earbuds' and a paragraph: 'Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.' Below this is a section titled 'Activate ambient sound mode from your mobile device' in blue. It contains two numbered steps: 1. Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature. 2. Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place. Below the steps is a paragraph: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' At the bottom left is a small image of a mobile device screen showing a slider control. At the bottom right are two circular icons: a gear (settings) and a bookmark.

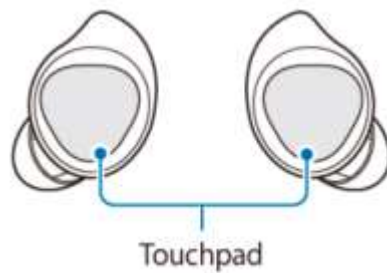
[35]



[35]

Moreover, Samsung Galaxy Buds+ allow control of volume of ambient noise through touch sensitive controls on a connected device.

Claim 22	Evidence
<p><b>22.</b> The method of claim 19, wherein the first set of controls and the second set of controls are a component of the headphones.</p>	<p>Samsung Galaxy Buds include a set of headphones with a touchpad for controlling the transmitted audio and ambient sound played by the headphones:</p> <div data-bbox="840 665 1743 1055"><p>The diagram shows a side view of a Samsung Galaxy Buds earbud. It is a small, rounded device with a 'Wing tip' at the top. On the side, there are 'Charging contacts' and a 'Touch-sensitive sensor'. The bottom part is the 'Ear tip'. On the front face, there is a 'Microphone' and a 'Touchpad'. The 'Touchpad' label is highlighted with a red rectangular box.</p></div> <p>[1]</p> <p><b>Using the touchpad</b></p> <p>You can control music playback, answer or reject calls, and start a conversation with Bixby using the touchpad.</p>



[1]

### **Tap and hold**

- **Activate a preset feature.** [1]

#### **Setting a preset tap-and-hold feature**

You can select a preset tap-and-hold feature of each earbud to activate features quickly and conveniently.

1 Launch the **Galaxy Wearable** app on the mobile device.

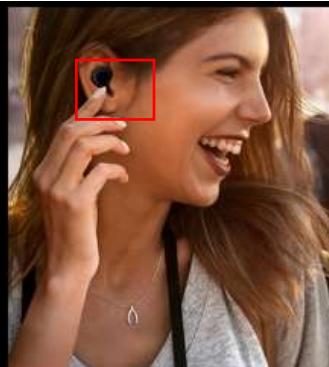
2 Tap **Touchpad**.

3 Tap **Left** or **Right** under **Touch and hold touchpad**.

4 Select a feature that you want to use as a preset tap-and-hold feature.

- **Voice command:** Start a conversation with Bixby.
- **Quick ambient sound:** Temporarily hear external sounds around you for up to one minute while decreasing the music volume.
- **Volume down/Volume up:** Adjust the volume.

[1]

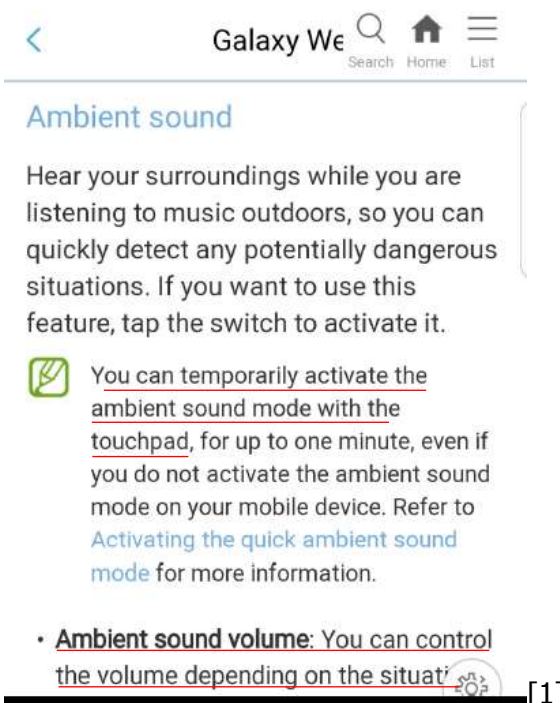


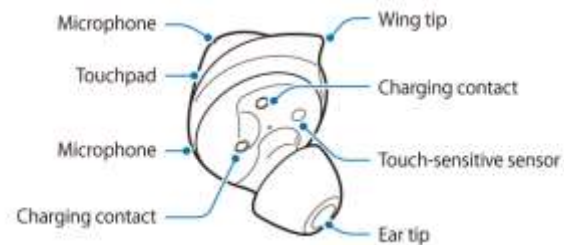
### Control with a touch

Easily switch tracks, take a call or turn up the volume with a touch. Music automatically pauses when you remove your Galaxy Buds and resumes with a tap when you place them back in your ears.

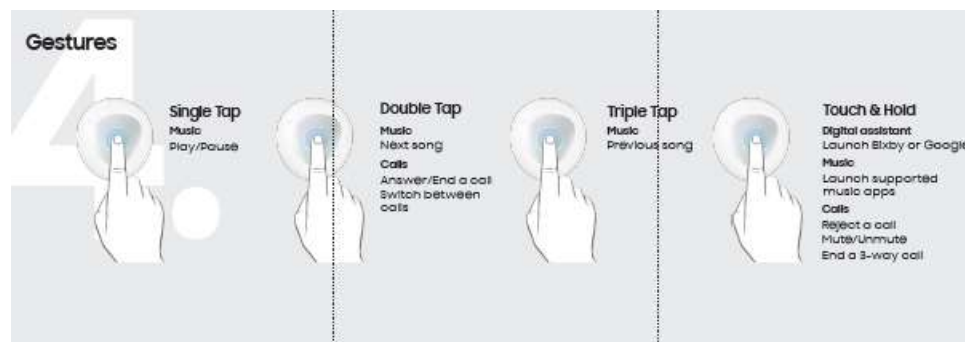
[16]

Samsung Galaxy Buds comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:

	 <p>The screenshot shows the 'Ambient sound' settings page in the Samsung Galaxy Wearable app. The page title is 'Ambient sound'. The text explains that this feature allows users to hear their surroundings while listening to music outdoors, helping them detect potentially dangerous situations. It instructs users to tap a switch to activate the feature. A green checkmark icon is shown next to the text: 'You can temporarily activate the ambient sound mode with the touchpad, for up to one minute, even if you do not activate the ambient sound mode on your mobile device. Refer to <a href="#">Activating the quick ambient sound mode</a> for more information.' Below this, a bullet point states: '• <b>Ambient sound volume:</b> You can control the volume depending on the situation.' A small gear icon is visible next to the text.</p> <p>[1]</p> <p>Samsung Galaxy Buds+ comprise a touchpad for receiving the user input to control the volume level of transmitted audio received through the headphones:</p>
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[33]



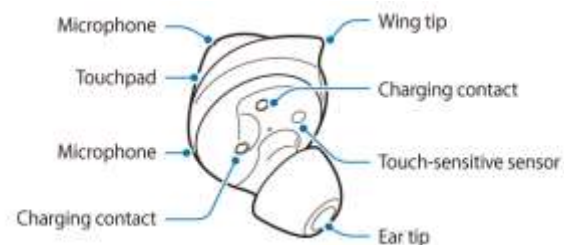
[30]



[35]



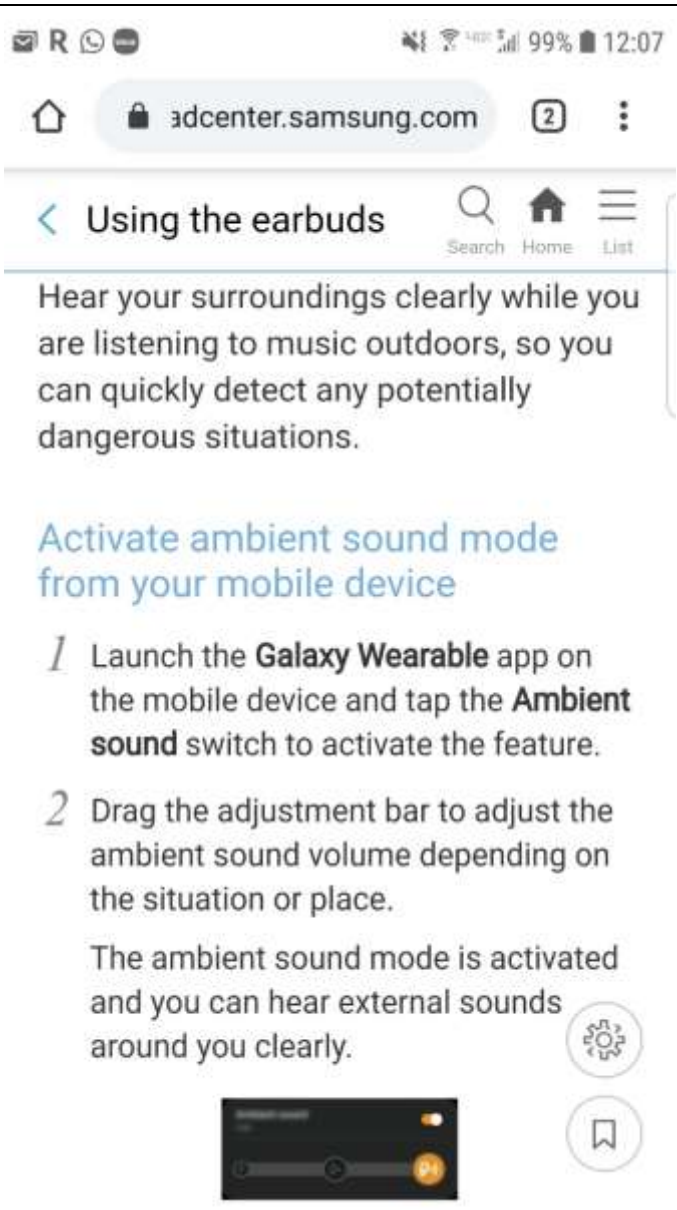
Samsung Galaxy Buds+ comprise a touchpad for receiving the user input to activate the ambient sound mode to control the volume level of ambient noise received through the headphones:



[33]

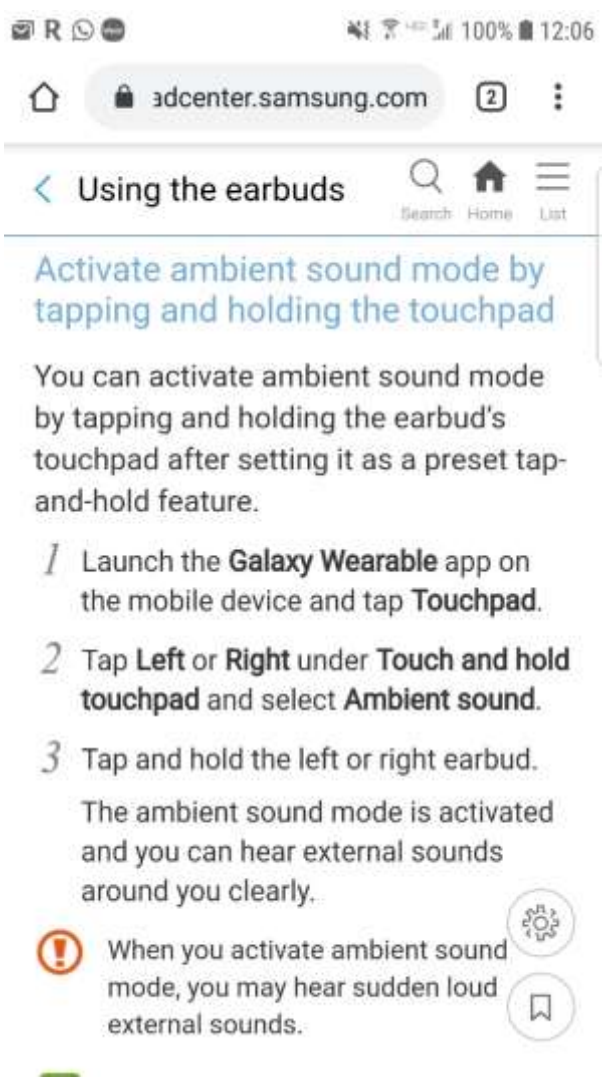


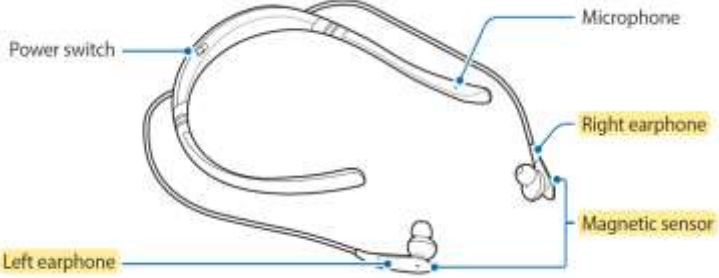
[35]




The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, R, a clock, and a battery level of 99% at 12:07. The address bar shows the URL "adcenter.samsung.com". Below the address bar, there is a navigation bar with a back arrow, the title "Using the earbuds", and icons for search, home, and list. The main content area has a heading "Using the earbuds" followed by a paragraph: "Hear your surroundings clearly while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations." Below this, there is a section titled "Activate ambient sound mode from your mobile device" in blue text. This section contains two numbered steps: 1. "Launch the **Galaxy Wearable** app on the mobile device and tap the **Ambient sound** switch to activate the feature." 2. "Drag the adjustment bar to adjust the ambient sound volume depending on the situation or place." Below the steps, there is a paragraph: "The ambient sound mode is activated and you can hear external sounds around you clearly." At the bottom of the content area, there is a small image of a mobile screen showing a slider control for ambient sound volume. To the right of the text, there are two circular icons: a gear icon and a bookmark icon.

[35]

	 <p>The screenshot shows a mobile browser interface. At the top, the status bar displays icons for mail, calendar, and other apps, along with signal strength, Wi-Fi, and 100% battery at 12:06. The address bar shows 'adcenter.samsung.com' with a lock icon and a tab indicator showing '2'. Below the address bar is a navigation bar with a back arrow, the title 'Using the earbuds', and icons for search, home, and a list menu. The main content area has a blue header 'Activate ambient sound mode by tapping and holding the touchpad'. Below this, a paragraph states: 'You can activate ambient sound mode by tapping and holding the earbud's touchpad after setting it as a preset tap-and-hold feature.' A numbered list follows: 1. Launch the <b>Galaxy Wearable</b> app on the mobile device and tap <b>Touchpad</b>. 2. Tap <b>Left</b> or <b>Right</b> under <b>Touch and hold touchpad</b> and select <b>Ambient sound</b>. 3. Tap and hold the left or right earbud. Below the list, a paragraph states: 'The ambient sound mode is activated and you can hear external sounds around you clearly.' An orange warning icon is followed by the text: 'When you activate ambient sound mode, you may hear sudden loud external sounds.' To the right of the text are two circular icons: a gear (settings) and a bookmark. A green progress bar is at the bottom left of the content area.</p> <p>[35]</p>
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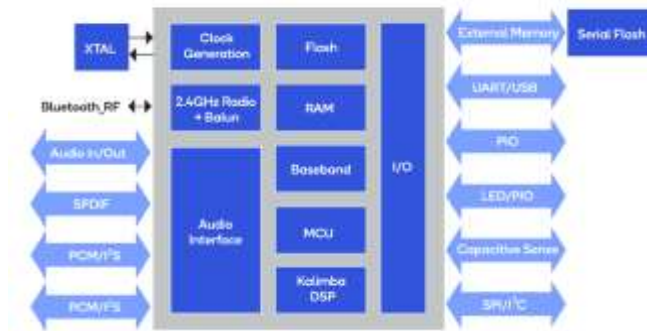
Claim 23	Evidence
<b>23[pre]</b> An audio system comprising:	The preamble is not limiting.
<b>23[a]</b> a first earphone comprising a magnet;	<p>The Samsung Level U Pro Active Noise Canceling ("ANC") comprise a first earphone having a magnet:</p> <p><u>Level U Pro ANC</u></p>  <p>[10]</p>

<p><b>23[b]</b> a second earphone comprising a magnetically attractable surface for removably coupling with the magnet;</p>	<p>The Samsung Level U Pro ANC comprise a second earphone comprising a magnetically attractable surface for removably coupling with the magnet:</p> <p><u>Level U Pro ANC</u></p> <p>Connecting the earphones</p> <p>Connect the earphones to each other using the built-in magnets.</p>  <p>[10]</p>
<p><b>23[c]</b> an electronic device controller configured to receive an activation signal when a magnetic decoupling is detected as the magnetically attractable surface is removed and decoupled from the magnet, wherein the activation signal causes transmitted audio to be played in the first earphone and the second earphone, further wherein the electronic device controller receives a deactivation signal when the magnetically attractable surface is again coupled to the magnet, wherein the deactivation signal causes the transmitted audio to stop being played in the first earphone and the second earphone;</p>	<p>The Samsung Level U Pro ANC comprises an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected:</p> <p>On information and belief, the Level U Pro ANC product use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/ I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, LUP ANC is also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

#### Level U Pro

#### Level U Pro ANC

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro (0000) from the list.

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro ANC (0000) from the list.



On information and belief, when the earphones of the Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

### Level U Pro ANC

**SAMSUNG Level U PRO ANC**

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SAMSUNG UNIQ & UNIQ AUDIO**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UNQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and PS splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**PACKAGE CONTAINS**  
Level U PRO ANC, 45 sets of Ear Gels (S.M.L. + Pre-Installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com](http://www.samsung.com) for standard 1-yr limited warranty/dispute resolution and other info.  
[www.samsung.com](http://www.samsung.com)

**Battery Life\***  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**How Noise Cancellation Works**  
Microphone detects incoming ambient noise  
Tuned ANC noise cancels ambient sound out  
Noise cancelling circuitry detects noise and sends it to speaker

**UNIQ Audio over Bluetooth**  
SUPERIOR AUDIO FIDELITY

**Flexible Unifone Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13 mm Piezo Speaker Units**  
deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S.M.L. + Pre-Installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (3 sec.)
[Magnet]	Play/Pause	Power On/Off
[Magnet]	Volume Up	Previous Track
[Magnet]	Volume Down	Next Track
[Magnet]	Play/Pause	Talk to Me

Other items single listed  
See individual article for country of origin  
Packaged in Vietnam

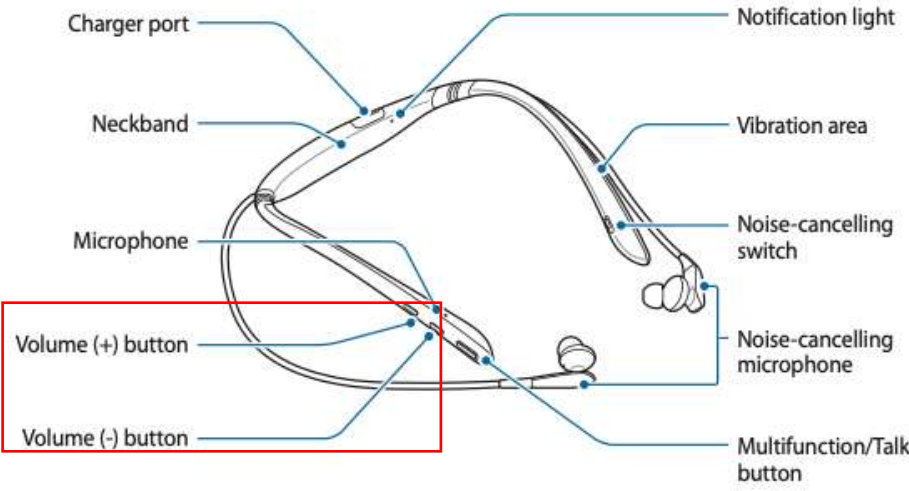
Ver. 0316-LUAN-01

QR Code: GH69-77374A370X

MADE IN VIETNAM

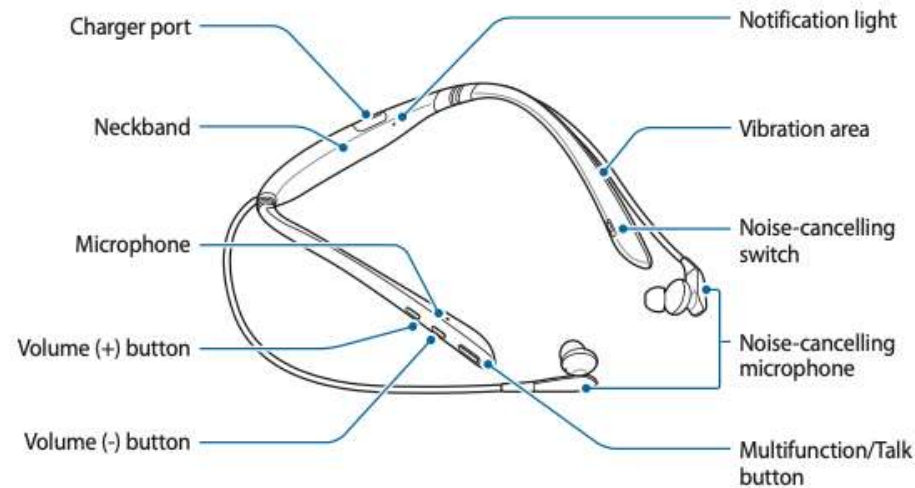
[14]



	<p>On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.</p>
<p><b>23[d]</b> a first set of controls for controlling a volume of the transmitted audio played by the first and second earphones; and</p>	<p>The Samsung Level U Pro Active Noise Canceling ("ANC") comprises a first set of controls for controlling a volume of the transmitted audio played by the first and second earphones:</p>  <p style="text-align: right;">[18]</p> <p><b>Volume buttons</b> • Press to adjust the volume during a call or media playback. [18]</p>

**23[e]** a second set of controls for controlling a volume of external audio played by the first and second earphones.

The Samsung Level U Pro Active Noise Canceling ("ANC") comprise a second set of controls for controlling a volume of external audio played by the first and second earphones:



[18]

<b>Multifunction/Talk button</b>	<ul style="list-style-type: none"> <li>Press and hold for one second to reject a call or to activate ambient sound mode.</li> </ul>
----------------------------------	---

[18]

### Using ambient sound mode

Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

Press and hold the Multifunction button for one second to activate the feature. The headset will beep and vibrate when the feature is turned on.

Press and hold the Multifunction button for one second again to deactivate the feature. The headset will beep after the feature is turned off.

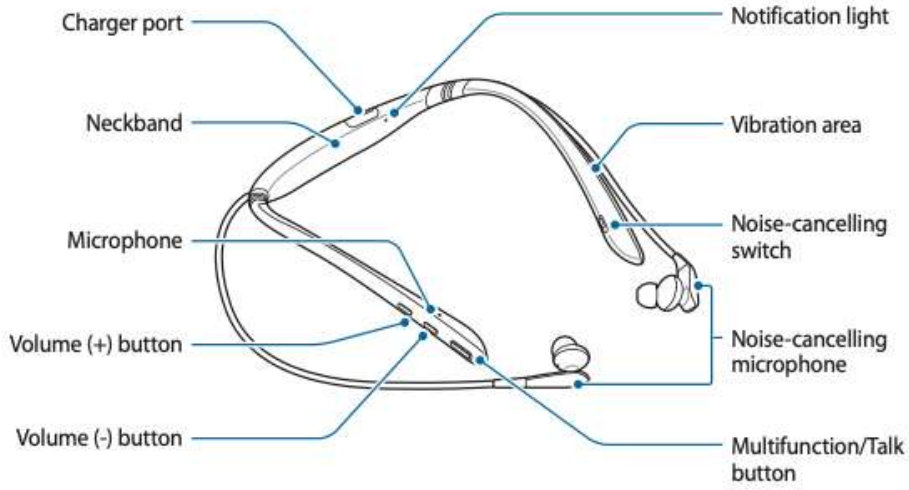



- In ambient sound mode, feedback may occur when adjusting the volume or touching the microphone.
- In ambient sound mode, you can still hear loud external sounds.

[18]



Claim 24	Evidence
<p><b>24.</b> The audio system of claim 23, wherein the transmitted audio comprises audio received from an electronic device.</p>	<p>The Samsung Level U Pro Active Noise Canceling (“ANC”) comprises a set of earphones for playing transmitted audio received from an electronic device connected through Bluetooth:</p> <p><b>Connecting via Bluetooth</b></p> <p><b>Bluetooth</b></p> <p><b>About Bluetooth</b></p> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables. [18]</p> <p><b>Connecting to other devices</b></p> <p><u>This headset is compatible with Bluetooth-enabled devices.</u></p> <ol style="list-style-type: none"> <li><b>1 Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li><b>2 Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device’s user manual.</li> <li><b>3 Other device</b> Tap <b>Samsung Level U Pro ANC (0000)</b> from the list. [18]</li> </ol>

Claim 25	Evidence
<b>25.</b> The audio system of claim 23, wherein the external audio comprises surrounding ambient noise received from an external microphone.	<p>The Samsung Level U Pro Active Noise Canceling (“ANC”) comprises a set of earphones with an external microphone for receiving the surrounding ambient noise:</p> <p><b>About This Product</b></p> <p><u>Level U PRO with Active Noise Cancellation eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise, cancelling it out so that only your audio reaches the speakers.</u></p> <p>[19]</p> <p>With its powerful ANC technology and two-way speakers, the LEVEL U Pro ANC provides studio-quality sound. <u>Rather than just drowning out ambient sounds around you, the LEVEL U Pro ANC actually picks up those external noises with two external microphones,</u> analyzes them, and creates inverted sound waves to cancel out those noises, reducing the noise going into your ears. The active noise cancellation of the LEVEL U Pro ANC is up to 90 percent effective, reducing outside sounds by up to 20 dB. The result means you can enjoy crystal-clear sound, without the distraction of exterior noises.</p> <p>[20]</p>

Claim 26	Evidence
<p><b>26.</b> The audio system of claim 25, wherein the second set of controls control the volume level of ambient noise received through the earphones.</p>	<p>The Samsung Level U Pro Active Noise Canceling ("ANC") comprise a second set of controls for controlling a volume of external audio played by the first and second earphones:</p>  <p>The diagram illustrates the Samsung Level U Pro Active Noise Canceling earphones with the following labeled components:</p> <ul style="list-style-type: none"> <li>Charger port</li> <li>Neckband</li> <li>Microphone</li> <li>Volume (+) button</li> <li>Volume (-) button</li> <li>Notification light</li> <li>Vibration area</li> <li>Noise-cancelling switch</li> <li>Noise-cancelling microphone</li> <li>Multifunction/Talk button</li> </ul> <p>[18]</p> <div data-bbox="835 894 1734 972" style="border: 1px solid red; padding: 5px;"> <p><b>Multifunction/Talk button</b> • Press and hold for one second to reject a call or to activate ambient sound mode.</p> </div> <p>[18]</p>

	<p><b>Using ambient sound mode</b></p> <p>Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.</p> <p>Press and hold the Multifunction button for one second to activate the feature. The headset will beep and vibrate when the feature is turned on.</p> <p>Press and hold the Multifunction button for one second again to deactivate the feature. The headset will beep after the feature is turned off.</p> <p> • <u>In ambient sound mode, feedback may occur when adjusting the volume or touching the microphone.</u></p> <p>• In ambient sound mode, you can still hear loud external sounds.</p> <p>[18]</p>
--	--

Claim 27	Evidence
<b>27.</b> The audio system of claim 23, wherein the audio system comprises a noise canceling element.	<p>The Samsung Level U Pro Active Noise Canceling (“ANC”) comprises a noise-canceling element:</p> <p><b>About This Product</b></p> <p>Level U PRO with Active Noise Cancellation eliminates unwanted ambient noise from your music. When the headset detects <u>outside noise, it produces an opposing sound wave designed to counteract the incoming noise,</u> cancelling it out so that only your audio reaches the speakers.</p> <p>[19]</p> <p>With its powerful ANC technology and two-way speakers, the LEVEL U Pro ANC provides studio-quality sound. <u>Rather than just drowning out ambient sounds around you, the LEVEL U Pro ANC actually picks up those external noises with two external microphones, analyzes them, and creates inverted sound waves to cancel out those noises, reducing the noise going into your ears.</u> The active noise cancellation of the LEVEL U Pro ANC is up to 90 percent effective, reducing outside sounds by up to 20 dB. The result means you can enjoy crystal-clear sound, without the distraction of exterior noises.</p> <p>[20]</p>

Claim 28	Evidence
<b>28[pre]</b> A method of operating an electronic device comprising:	The preamble is not limiting.
<b>28[a]</b> detecting an engagement status of a magnetic surface of a first earphone with a magnetically attractable surface of a second earphone;	<p>The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") can detect the engagement status of a magnetic surface of a first earphone with a magnetically attractable surface of a second earphone:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><u>Level U Pro</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[9]</p> </div> <div style="text-align: center;"> <p><u>Level U Pro ANC</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[10]</p> </div> </div> <p style="text-align: center;"><u>Level U Pro</u></p>



# Style & Performance

The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

[21]

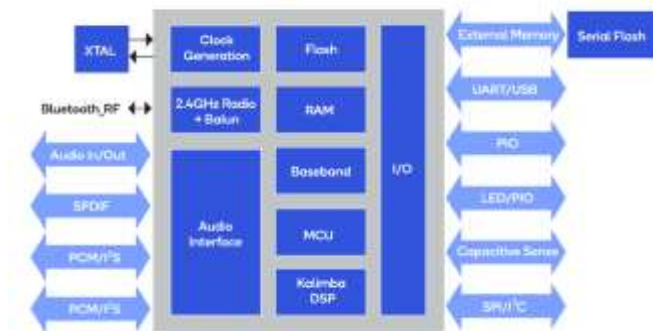
Level U Pro ANC

	<h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>
<p><b>28[b]</b> sending an activation signal to an electronic device when a magnetic decoupling is detected as the magnetic surface of the first earphone is removed and decoupled from the magnetically attractable surface of the second earphone, wherein the activation signal causes transmitted audio to be played in the first earphone and the second earphone;</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected:</p> <p>On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

#### Level U Pro

#### Level U Pro ANC

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro (0000) from the list.

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro ANC (0000) from the list.

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

### Level U Pro



[13]

## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SAMSUNG UHQ AUDIO**  
**OVER BLUETOOTH**  
Ultra High Quality Audio (UHQ) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQ is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQ by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and PS splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with **Sound Share**, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**SAMSUNG LEVEL APP CONTROLLABLE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text to Speech and more.  
Search Samsung Level on the Google Play® store

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-Installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/vietnam/level](http://www.samsung.com/vietnam/level) for standard 1-yr limited warranty/dispute resolution info.  
[www.samsung.com](http://www.samsung.com)

**Battery Life\***  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**How Noise Cancellation Works**  
Microphone detects incoming ambient noise  
Sound is recorded and sent to noise cancellation circuitry  
Inverted ANC wave cancels ambient sound out  
Noise cancelling circuitry converts noise and sends it to speaker

**UHQ AUDIO (OVER BLUETOOTH)**  
SUPERIOR AUDIO FIDELITY

13mm Dynamic and 13mm Piezo Speaker Units deliver high-quality, clear sound

Includes 4 sets of Ear Gels  
S, M, L + Pre-Installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec)
[Up Arrow]	Volume Up	Previous Track
[Down Arrow]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Toggle Mode

Other items simplified  
See individual article for country of origin  
Packaged in Vietnam

GH69-27376A370X

Ver: 0316-LUANC-n-1

[14]



**28[c]** sending a deactivation signal to the electronic device when the magnetic surface of the first earphone is again coupled to the magnetically attractable surface of the second earphone, wherein the deactivation signal causes the transmitted audio to stop being played in the first earphone and the second earphone;

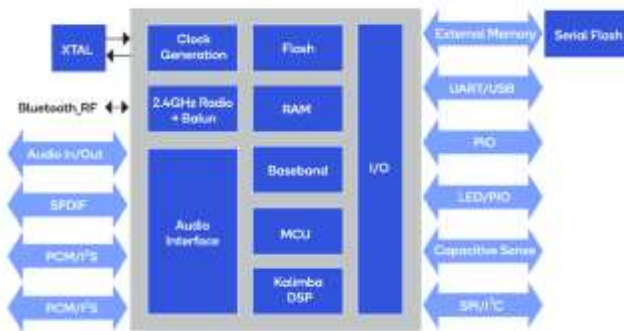
The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected:

On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives a deactivation signal when the earphones are magnetically coupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5; Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

Level U ProLevel U Pro ANC



	<div data-bbox="840 219 1257 264"> <h2>Connecting via Bluetooth</h2> </div> <div data-bbox="840 302 957 331"> <h3>Bluetooth</h3> </div> <div data-bbox="840 355 987 380"> <h4>About Bluetooth</h4> </div> <div data-bbox="840 384 1341 459"> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> </div> <div data-bbox="840 485 1161 518"> <h3>Connecting to other devices</h3> </div> <div data-bbox="840 524 1190 547"> <p>This headset is compatible with Bluetooth-enabled devices.</p> </div> <div data-bbox="840 557 1386 745"> <ol style="list-style-type: none"> <li>1 <b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li>2 <b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li>3 <b>Other device</b> Tap Samsung Level U Pro (0000) from the list.</li> </ol> </div> <div data-bbox="1474 212 1892 254"> <h2>Connecting via Bluetooth</h2> </div> <div data-bbox="1474 292 1596 319"> <h3>Bluetooth</h3> </div> <div data-bbox="1474 344 1623 367"> <h4>About Bluetooth</h4> </div> <div data-bbox="1474 371 1971 443"> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> </div> <div data-bbox="1419 498 1751 531"> <h3>Connecting to other devices</h3> </div> <div data-bbox="1419 537 1778 560"> <p>This headset is compatible with Bluetooth-enabled devices.</p> </div> <div data-bbox="1419 570 1971 756"> <ol style="list-style-type: none"> <li>1 <b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li>2 <b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li>3 <b>Other device</b> Tap Samsung Level U Pro ANC (0000) from the list.</li> </ol> </div> <div data-bbox="829 834 1984 943"> <p>On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop being played in the first and second earphones.</p> </div> <div data-bbox="1281 977 1463 1018"> <p><u>Level U Pro</u></p> </div>
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**SAMSUNG**  
**Level** U PRO

**SAMSUNG UHQ AUDIO ON-TO-AUTODYN™**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 3x wider frequency range than standard CD-quality wireless sound. Combined with noise-isolating ear gels, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UHQ Audio on-TO-AUTODYN™**  
SUPERIOR AUDIO FIDELITY



Flexible (Lockcase) joints  
to curve around the neck, comfort

Battery life\* - up to 9 hrs talk/  
7 hrs play/100 hrs standby

13mm Dynamic and  
13mm Piezo Speaker Units  
deliver high-quality,  
clear sound

Includes 4 sets of Ear Gels  
S, M, L + Pre-installed Manual

**VOICE & EXTENSIBILITY**  
The ergonomic around the neck design of Level U Pro provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality intuitively by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**REMOTE CONTROLS**



Button	Short Press	Long Press (1 sec)
[Up Arrow]	Volume Up	Previous Track
[Down Arrow]	Volume Down	Next Track
[Touch Area]	Play/Pause	S Voice

**SAMSUNG LEVEL APP COMPATIBLE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text-to-Speech and more. Search Samsung Level on the Google Play™ store.

**INCLUDES CONTENT**  
Level U Pro, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

For standard 1 yr  
limited warranty/duplicate procedures/other info  
[www.samsung.com/us/support](http://www.samsung.com/us/support)  
Ver. 0316-01PRO-0-4

**Barcode:** XD01TZSA15  
Samsung Level U Pro Blue - 16mm UHQ Audio - Bronze Tone

[13]

## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**How Noise Cancellation Works**

**Microphone detects** unwanted ambient noise. Sound is processed and sent to noise cancellation circuitry.

**Processed ANC** noise cancels unwanted sound out.

**Noise cancelling** circuitry sends new sound signal to speaker.

**Same Line, UNIQ Audio, OVER 10X TOOTH**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UNIQ AUDIO (HIFI Bluetooth)**  
SUPERIOR AUDIO FIDELITY

**Actual Sound** **Bluetooth Standard** **UNIQ Audio (Level U Pro ANC)**

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and PS splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (3 sec)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Toggle Mode

**Battery Life\***  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/level](http://www.samsung.com/level) for standard 1-yr limited warranty/dispute resolution info.

[www.samsung.com](http://www.samsung.com)

Other items supplied  
See individual article for country of origin  
Packaged in Vietnam

Ver: 0316-LUANC-n-1

INFORMATION (2019-08-08)  
MANUFACTURE DATE: 2019-05-24  
MADE IN VIETNAM/PACKAGED IN VIETNAM  
S/N: RPT02026100110  
S/N: RPT02026100110  
S/N: RPT02026100110

[14]

**28[d]** operating the electronic device based upon the engagement status of the magnetic surface of the first earphone with the magnetically attractable surface of the second earphone;

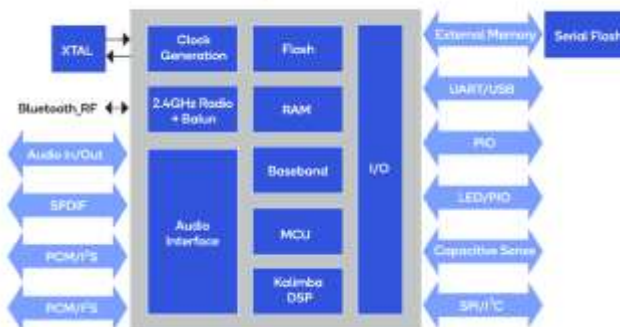
The Samsung Level U Pro and Level U Pro ANC can operate (e.g. Controlling calls and music functionality) the electronic device based upon the engagement status of the magnetic surface of the first earphone with the magnetically attractable surface of the second earphone;

On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

Level U Pro



[13]

Level U Pro ANC



**SAMSUNG**  
**Level** UPROANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SAVE LINE, UNIQ & UHQ**  
**OVER BUILT TOOTH**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and P2 splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**DOWNLOAD UNIQ-ART TO YOUR MOBILE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text to Speech and more. Search Samsung Level on the Google Play™ store.

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide.

See [www.samsung.com/level](http://www.samsung.com/level) for standard 1-yr limited warranty & dispute resolution info.  
[www.samsung.com](http://www.samsung.com)

**How Noise Cancellation Works**  
Microphone detects incoming ambient noise  
Sound is measured and ANC noise cancels out unwanted noise  
Noise canceling technology detects noise and cancels it out

**UNIQ Audio Over Bluetooth**  
SUPERIOR AUDIO FIDELITY

Actual Sound  
Bluetooth signal  
UNIQ Audio Level U PRO ANC

**Battery Life\***  
Up to 6 hrs. talk/play and 20 hrs. standby with ANC on  
Up to 8.5 hrs. talk/play with ANC off

**Flexible Uniflex Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
Deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec.)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Take to Me

Other item compared  
See individual article for country of origin  
Packaged in Vietnam

GNB9-27374A37X

Other item compared  
See individual article for country of origin  
Packaged in Vietnam

Ver. 0316-LUANC-n-1

[14]

On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.

**28[e]** receiving the transmitted audio from the electronic device;

The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") comprises a set of earphones for playing transmitted audio received from an electronic device connected through Bluetooth:

Level U Pro

## Connecting via Bluetooth

### Bluetooth

#### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

[22]

### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

**1 Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.

When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.

**2 Other device** Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.

**3 Other device** Tap **Samsung Level U Pro (0000)** from the list.

[22]



Level U Pro ANC

## Connecting via Bluetooth

### Bluetooth

#### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

[18]

### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.

When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.

- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.

- 3 **Other device** Tap **Samsung Level U Pro ANC (0000)** from the list.

[18]

**28[f]** receiving external audio from a microphone; and

The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") comprises a set of earphones with microphones for receiving the external audio:

Level U Pro

The 13mm Dynamic and 13mm Piezo speaker units deliver high-quality, clear sound. The dual-microphone noise reduction and echo cancellation reduce outside sound interference and feedback during calls.

[21]

Level U Pro ANC

## About This Product

Level U PRO with Active Noise Cancellation eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise, cancelling it out so that only your audio reaches the speakers.

[19]

With its powerful ANC technology and two-way speakers, the LEVEL U Pro ANC provides studio-quality sound. Rather than just drowning out ambient sounds around you, the LEVEL U Pro ANC actually picks up those external noises with two external microphones, analyzes them, and creates inverted sound waves to cancel out those noises, reducing the noise going into your ears. The active noise cancellation of the LEVEL U Pro ANC is up to 90 percent effective, reducing outside sounds by up to 20 dB. The result means you can enjoy crystal-clear sound, without the distraction of exterior noises.

[20]

**28[g]** adjusting a volume level in the first earphone and the second earphone of one of the transmitted audio and the external audio.

The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") comprise a set of control buttons for adjusting a volume level of the transmitted audio in the first earphone and the second earphone:

Level U Pro

# Easy to Use controls

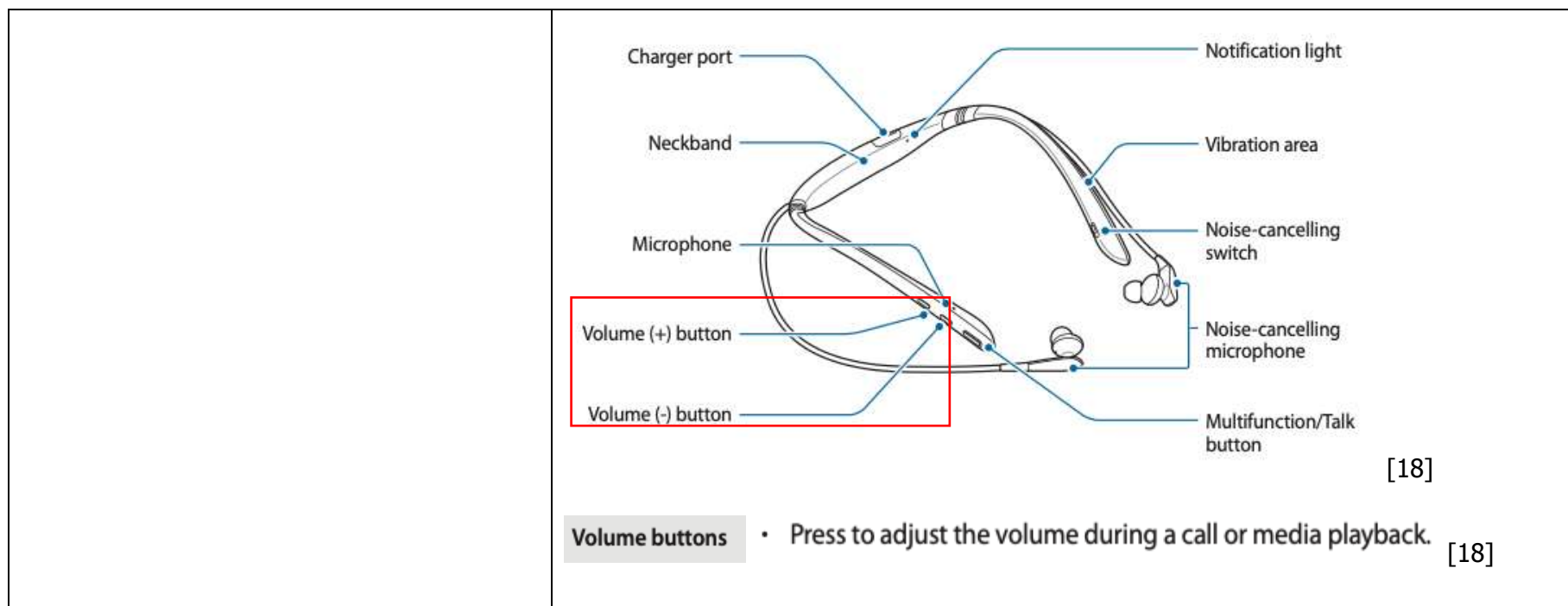
Control volume, play/pause, track advance and phone from easy to use control buttons.

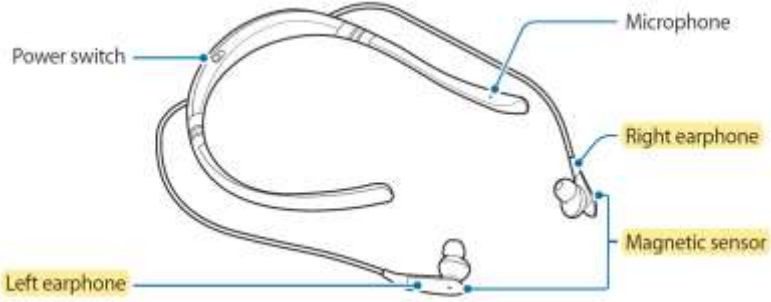
[21]

	Button	Short Press	Long Press
		Volume UP	REW (1sec)
		Volume DOWN	FWD (1sec)
		Play/Pause	Pairing (3sec)

[21]

Level U Pro ANC



Claim 29	Evidence
<b>29[pre]</b> An audio system comprising:	The preamble is not limiting.
<b>29[a]</b> a first earphone;	<p>The Samsung and Level U Pro Active Noise Canceling ("ANC") comprise a first earphone:</p>  <p>[10]</p>

**29[b]** a second earphone removably coupled to the first earphone;

The Samsung Level U Pro ANC comprise a second earphone removably coupled to the first earphone:

**Connecting the earphones**

Connect the earphones to each other using the built-in magnets.



[10]

**29[c]** an electronic device controller configured to receive an activation signal when a magnetic decoupling is detected as the second earphone is removed and decoupled from the first earphone, wherein the activation signal causes transmitted audio to be played in the first earphone and the second earphone, wherein the electronic device controller receives a deactivation signal when the second earphone is again coupled to the first earphone, wherein the deactivation signal causes the transmitted audio to stop being played in the first earphone and the second earphone;

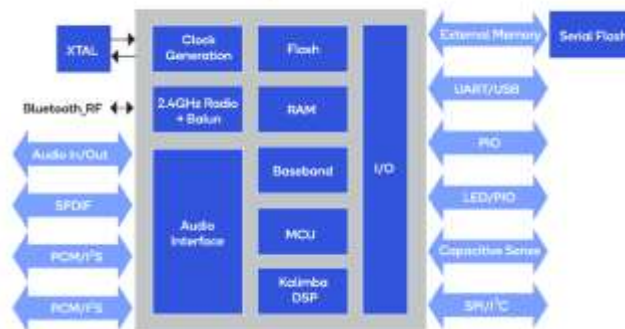
The Samsung Level U Pro ANC comprises an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected:

On information and belief, the Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/ I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5; Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

Level U Pro ANC



## Connecting via Bluetooth

### Bluetooth

#### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap **Samsung Level U Pro ANC (0000)** from the list.

On information and belief, when the earphones of the Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

Level U Pro ANC

**SAMSUNG**  
**Level** UPROANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SAME LINE, UNIQ AUDIO**  
**OVER BUILT TOUGH**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and P2 splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**DOWNLOAD UNIQ APP ON MOBILE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text to Speech and more. Search Samsung Level on the Google Play™ store.

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide.  
See [www.samsung.com/level](http://www.samsung.com/level) for standard 1-yr limited warranty & dispute resolution info.  
[www.samsung.com](http://www.samsung.com)

**How Noise Cancellation Works**  
Microphone detects incoming ambient noise  
Sound is measured and ANC is then generated to cancel out  
Noise canceling circuitry sends wave and cancels to operate

**UNIQ AUDIO OVER BLUETOOTH**  
**SUPERIOR AUDIO FIDELITY**

**Battery Life\***  
Up to 6 hrs. talk/play and 20 hrs. standby with ANC on  
Up to 8.5 hrs. talk/play with ANC off

**Flexible Uniflex Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
Deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec.)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Take to Me Mode

**OTHER INFORMATION**  
Other item compared: See individual article for country of origin.  
Packaged in Vietnam

**QR CODE**  
GNS9-77574A37X

**Other item compared**  
See individual article for country of origin.  
Packaged in Vietnam

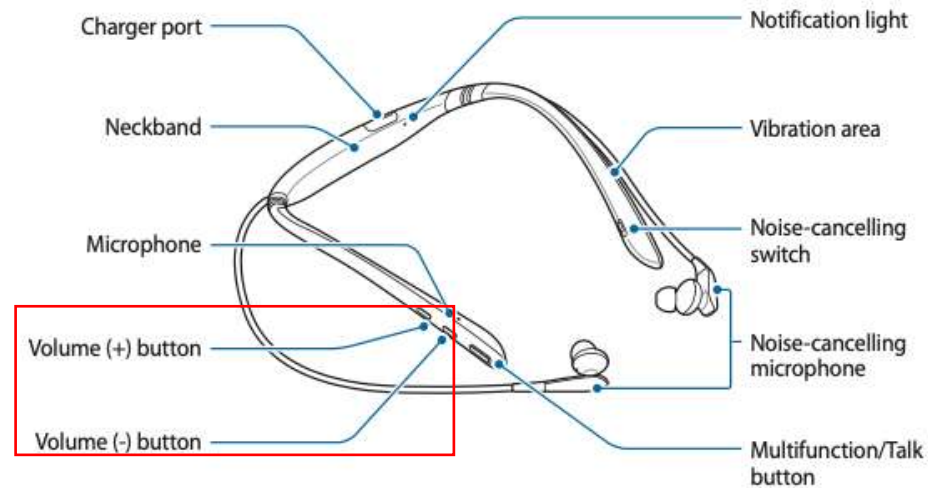
**Ver. 0316-LUANC-n-1**

[14]

On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.

**29[d]** a first set of controls for controlling a volume of the transmitted audio played by the first and second earphones; and

The Samsung Level U Pro Active Noise Canceling ("ANC") comprises a first set of controls for controlling a volume of the transmitted audio played by the first and second earphones:

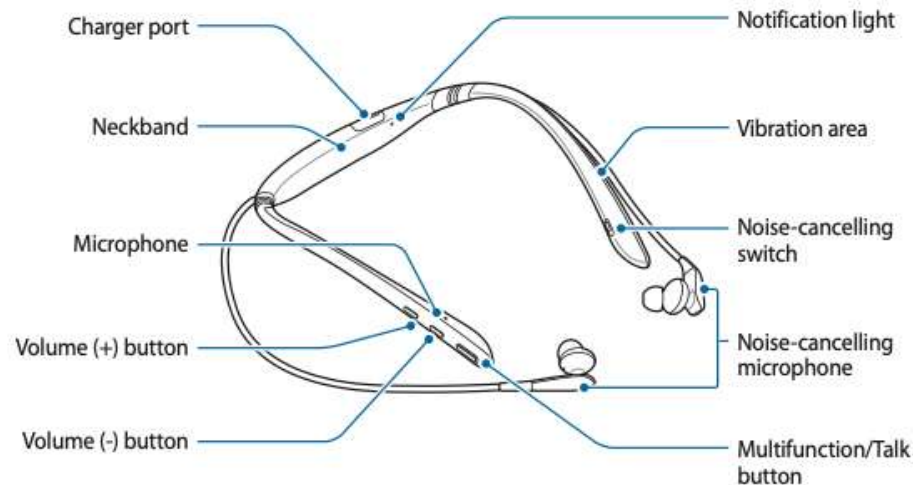


[18]

**Volume buttons** • Press to adjust the volume during a call or media playback. [18]

**29[e]** a second set of controls for controlling a volume of external audio played by the first and second earphones.

The Samsung Level U Pro Active Noise Canceling ("ANC") comprise a second set of controls for controlling a volume of external audio played by the first and second earphones:



[18]

- |                                       |   |
|---------------------------------------|---|
| <b>Multifunction/<br/>Talk button</b> | <ul style="list-style-type: none"> <li>• Press and hold for one second to reject a call or to activate ambient sound mode.</li> </ul> |
|---------------------------------------|---|

[18]

### Using ambient sound mode

Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

Press and hold the Multifunction button for one second to activate the feature. The headset will beep and vibrate when the feature is turned on.

Press and hold the Multifunction button for one second again to deactivate the feature. The headset will beep after the feature is turned off.



- In ambient sound mode, feedback may occur when adjusting the volume or touching the microphone.
- In ambient sound mode, you can still hear loud external sounds.

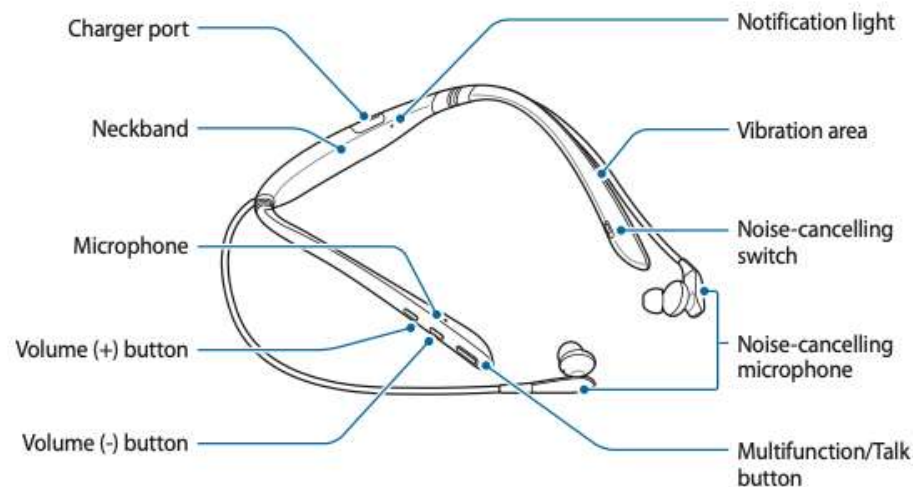
[18]

Claim 30	Evidence
<p><b>30</b> The audio system of claim 29, wherein the transmitted audio comprises audio received from an electronic device.</p>	<p>The Samsung Level U Pro Active Noise Canceling (“ANC”) comprises a set of earphones for playing transmitted audio received from an electronic device connected through Bluetooth:</p> <p><b>Connecting via Bluetooth</b></p> <p><b>Bluetooth</b></p> <p><b>About Bluetooth</b></p> <p><u>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</u></p> <p>[18]</p> <p><b>Connecting to other devices</b></p> <p><u>This headset is compatible with Bluetooth-enabled devices.</u></p> <ol style="list-style-type: none"> <li><b>1 Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li><b>2 Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device’s user manual.</li> <li><b>3 Other device</b> Tap <b>Samsung Level U Pro ANC (0000)</b> from the list.</li> </ol> <p>[18]</p>

Claim 31	Evidence
<p><b>31.</b> The audio system of claim 29, wherein the external audio comprises surrounding ambient noise received from an external microphone.</p>	<p>The Samsung Level U Pro Active Noise Canceling (“ANC”) comprises a set of earphones with external microphones for receiving the surrounding ambient noise:</p> <p><b>About This Product</b></p> <p><u>Level U PRO with Active Noise Cancellation eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise, cancelling it out so that only your audio reaches the speakers.</u></p> <p>[19]</p> <p>With its powerful ANC technology and two-way speakers, the LEVEL U Pro ANC provides studio-quality sound. <u>Rather than just drowning out ambient sounds around you, the LEVEL U Pro ANC actually picks up those external noises with two external microphones, analyzes them, and creates inverted sound waves to cancel out those noises, reducing the noise going into your ears. The active noise cancellation of the LEVEL U Pro ANC is up to 90 percent effective, reducing outside sounds by up to 20 dB. The result means you can enjoy crystal-clear sound, without the distraction of exterior noises.</u></p> <p>[20]</p>

Claim 32	Evidence
<p><b>32.</b> The audio system of claim 31, wherein the second set of controls control the volume level of ambient noise received through the earphones.</p>	<p>The Samsung Level U Pro Active Noise Canceling (“ANC”) comprises a set of earphones with a second set of controls to control the volume level of ambient noise received through the earphones.:</p> <p>About This Product</p> <p><u>Level U PRO with Active Noise Cancellation eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise, cancelling it out so that only your audio reaches the speakers.</u></p> <p>[19]</p> <p>With its powerful ANC technology and two-way speakers, the LEVEL U Pro ANC provides studio-quality sound. <u>Rather than just drowning out ambient sounds around you, the LEVEL U Pro ANC actually picks up those external noises with two external microphones, analyzes them, and creates inverted sound waves to cancel out those noises, reducing the noise going into your ears.</u> The active noise cancellation of the LEVEL U Pro ANC is up to 90 percent effective, reducing outside sounds by up to 20 dB. The result means you can enjoy crystal-clear sound, without the distraction of exterior noises.</p> <p>[20]</p>





[18]

- |                                       |   |
|---------------------------------------|---|
| <b>Multifunction/<br/>Talk button</b> | <ul style="list-style-type: none"> <li>Press and hold for one second to reject a call or to activate ambient sound mode.</li> </ul> |
|---------------------------------------|---|

[18]

### Using ambient sound mode

Hear your surroundings while you are listening to music outdoors, so you can quickly detect any potentially dangerous situations.

Press and hold the Multifunction button for one second to activate the feature. The headset will beep and vibrate when the feature is turned on.

Press and hold the Multifunction button for one second again to deactivate the feature. The headset will beep after the feature is turned off.

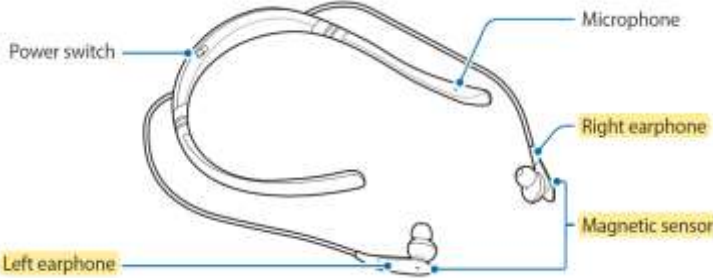



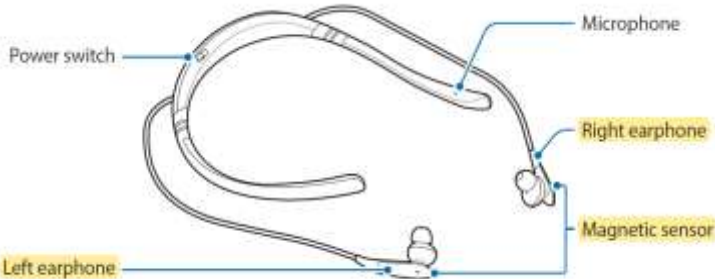

- In ambient sound mode, feedback may occur when adjusting the volume or touching the microphone.
- In ambient sound mode, you can still hear loud external sounds.



[18]



Claim 33	Evidence
<b>33.</b> The audio system of claim 29, wherein the audio system comprises a noise canceling element.	<p>The Samsung Level U Pro Active Noise Canceling (“ANC”) comprises a noise canceling element:</p> <p><b>About This Product</b></p> <p><u>Level U PRO with Active Noise Cancellation eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise, cancelling it out so that only your audio reaches the speakers.</u></p> <p>[19]</p> <p>With its powerful ANC technology and two-way speakers, the LEVEL U Pro ANC provides studio-quality sound. <u>Rather than just drowning out ambient sounds around you, the LEVEL U Pro ANC actually picks up those external noises with two external microphones, analyzes them, and creates inverted sound waves to cancel out those noises, reducing the noise going into your ears.</u> The active noise cancellation of the LEVEL U Pro ANC is up to 90 percent effective, reducing outside sounds by up to 20 dB. The result means you can enjoy crystal-clear sound, without the distraction of exterior noises.</p> <p>[20]</p>

Claim 34	Evidence
<p><b>34.</b> The audio system of claim 29, wherein the first earphone comprises a magnet and the second earphone comprises a magnetically attractable surface.</p>	<p>The Samsung Level U Pro Active Noise Canceling ("ANC") comprises a first earphone with a magnet and a second earphone with a magnetically attractable surface:</p>  <p>[10]</p> <p><b>Connecting the earphones</b> Connect the earphones to each other using the built-in magnets.</p>  <p>[10]</p>

Claim 35	Evidence
<p><b>35.</b> The audio system of claim 29, wherein the first earphone comprises a first magnet and the second earphone comprises a second magnet.</p>	<p>The Samsung Level U Pro Active Noise Canceling ("ANC") comprise a set of earphones, wherein the first earphone comprises a first magnet and the second earphone comprises a second magnet:</p>  <p>[10]</p> <p><b>Connecting the earphones</b> Connect the earphones to each other using the built-in magnets.</p>  <p>[10]</p>

Claim 36	Evidence
<b>36[pre]</b> A method of operating an electronic device comprising:	The preamble is not limiting.
<b>36[a]</b> detecting an engagement status of a first earphone with a second earphone;	<p>The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") can detect the engagement status of a magnetic surface of a first earphone with a magnetically attractable surface of a second earphone:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><u>Level U Pro</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[9]</p> </div> <div style="text-align: center;"> <p><u>Level U Pro ANC</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[10]</p> </div> </div> <p style="text-align: center;"><u>Level U Pro</u></p>

# Style & Performance

The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

[21]

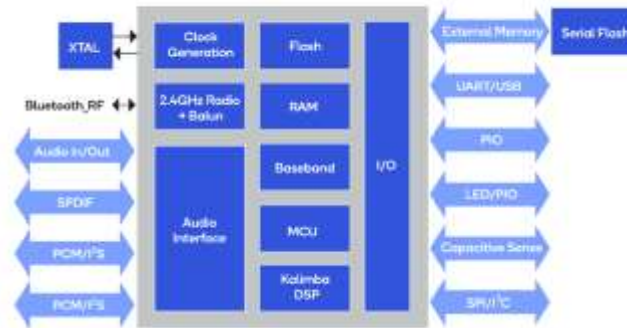
Level U Pro ANC

	<h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>
<p><b>36[b]</b> sending an activation signal to an electronic device when a magnetic decoupling is detected as the first earphone is removed and decoupled from the second earphone, wherein the activation signal causes transmitted audio to be played in the first earphone and the second earphone;</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected:</p> <p>On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5; Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

#### Level U Pro

#### Level U Pro ANC

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro (0000) from the list.

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro ANC (0000) from the list.

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On



information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

### Level U Pro



[13]

### Level U Pro ANC

265

**36[c]** sending a deactivation signal to the electronic device when the first earphone is again coupled to the second earphone, wherein the deactivation signal causes the transmitted audio to stop being played in the first earphone and the second earphone;

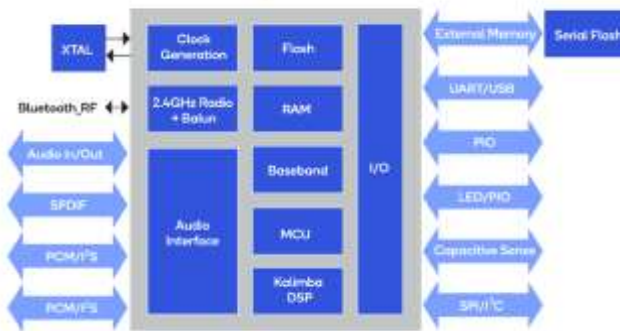
The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected:

On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives a deactivation signal when the earphones are magnetically coupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5; Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;"><u>Level U Pro</u></p> <h2 style="text-align: center;">Connecting via Bluetooth</h2> <h3 style="color: #0070C0;">Bluetooth</h3> <p><b>About Bluetooth</b></p> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> <h3 style="color: #0070C0;">Connecting to other devices</h3> <p>This headset is compatible with Bluetooth-enabled devices.</p> <ol style="list-style-type: none"> <li><b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li><b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li><b>Other device</b> Tap Samsung Level U Pro (0000) from the list.</li> </ol> </div> <div style="width: 48%;"> <p style="text-align: center;"><u>Level U Pro ANC</u></p> <h2 style="text-align: center;">Connecting via Bluetooth</h2> <h3 style="color: #0070C0;">Bluetooth</h3> <p><b>About Bluetooth</b></p> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> <h3 style="color: #0070C0;">Connecting to other devices</h3> <p>This headset is compatible with Bluetooth-enabled devices.</p> <ol style="list-style-type: none"> <li><b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li><b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li><b>Other device</b> Tap Samsung Level U Pro ANC (0000) from the list.</li> </ol> </div> </div> <p style="text-align: center;">On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.</p> <p style="text-align: center;"><u>Level U Pro</u></p>
--	--

**SAMSUNG**  
**Level** U PRO

**SAMSUNG UHQ AUDIO ON/OFF AUTOMATIC**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 3x wider frequency range than standard CD-quality wireless sound. Combined with noise-isolating ear gels, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UHQ Audio (up to 3x wider frequency range)**  
**SUPERIOR AUDIO FIDELITY**



Flexible (soft) ear gels  
to wrap around the neck, comfort

Battery life\* - up to 9 hrs talk/  
7 hrs play/100 hrs standby

13mm Dynamic and  
13mm Piezo Speaker Units  
deliver high quality,  
clear sound

Includes 4 sets of Ear Gels  
S, M, L + Pre-installed Manual

**VOICE & EXTENSIBILITY**  
The ergonomic around the neck design of Level U Pro provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionally intuitively by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with **Sound Share**, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**REMOTE CONTROLS**



Button	Short Press	Long Press (1 sec)
[Up Arrow]	Volume Up	Previous Track
[Down Arrow]	Volume Down	Next Track
[Touch Area]	Play/Pause	S Voice

**SAMSUNG LEVEL APP COMPATIBLE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text-to-Speech and more.  
Search Samsung Level on the Google Play™ store.

**INCLUDES CONTENT**  
Level U Pro, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels),  
Micro USB Charging Cable, Quick Start Guide

For standard type  
limited warranty/duplicate procedures/other info  
[www.samsung.com](http://www.samsung.com)  
Ver. 0316-01PRO-0-4

**Barcode:** XD01TZSA15  
Samsung Level U Pro Blue - 16mm UHQ Audio - Bronze  
Note

[13]



## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**NEW HEAD CANCELLATION WORKS**  
Microphone detects incoming ambient noise. Sound is filtered and sent to noise cancellation circuit. Filtered ANC noise cancels unwanted sound out. Noise cancellation circuit sends new sound signal to speakers.

**SAFARI LINE: UHQ AUDIO OVER BUILT-IN BT**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UHQ AUDIO (OVER BLUETOOTH)**  
SUPERIOR AUDIO FIDELITY

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and PS splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**BATTERY LIFE\***  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**Flexible Urethane Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 15mm Piezo Speaker Units**  
deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (3 sec)
[Magnet]	Volume Up	Previous Track
[Magnet]	Volume Down	Next Track
[Magnet]	Play/Pause	Toggle Mode

**Other items supplied**  
See individual article for country of origin  
Packaged in Vietnam

**QR CODE**  
G969-3737AA/3701

**Other items supplied**  
See individual article for country of origin  
Packaged in Vietnam

**Ver: 0316-LUANC-n-1**

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/vietnam/level](http://www.samsung.com/vietnam/level) for standard 1-yr limited warranty/dispute resolution info.

[www.samsung.com](http://www.samsung.com)

[14]

**36[d]** operating the electronic device based upon the engagement status of the first earphone with the second earphone;

The Samsung Level U Pro and Level U Pro ANC can operate (e.g. Controlling calls and music functionality) the electronic device based upon the engagement status of the magnetic surface of the first earphone with the magnetically attractable surface of the second earphone;

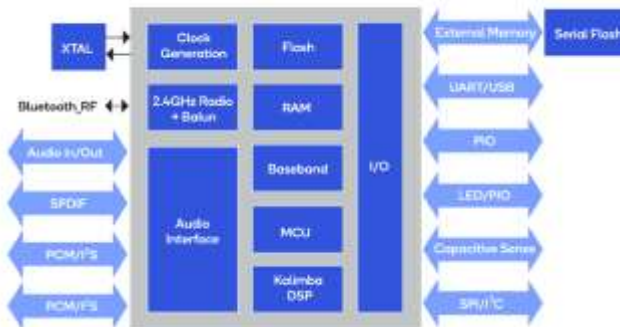
On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]



[11]



CSR8675 Block Diagram



[12]

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

Level U Pro



[13]

Level U Pro ANC

**SAMSUNG**  
**Level** UPROANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SAME LINE, UNIQ A UNIQ**  
**OVER BUILT TOOTH**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and P2 splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**DOWNLOAD UNIQ APP ON MOBILE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text to Speech and more. Search Samsung Level on the Google Play™ store.

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide.  
See [www.samsung.com/level](http://www.samsung.com/level) for standard 1-yr limited warranty & dispute resolution info.  
[www.samsung.com](http://www.samsung.com)

**How Noise Cancellation Works**  
Microphone detects incoming ambient noise  
Sound is processed and ANC wave is generated  
Noise canceling ability blocks noise and allows you to operate

**UNIQ Audio Over Bluetooth**  
**SUPERIOR AUDIO FIDELITY**

**Battery Life\***  
Up to 6 hrs. talk/play and 20 hrs. standby with ANC on  
Up to 8.5 hrs. talk/play with ANC off

**Flexible Uniflare Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
Deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec.)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Take to Me

**OTHER INFORMATION**  
Other item compared  
See individual article for country of origin  
Packaged in Vietnam

**QR CODE**  
GNS9-27374A37X

**Other item compared**  
See individual article for country of origin  
Packaged in Vietnam

**Ver. 0316-LUANC-n-1**

[14]

On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.

**36[e]** receiving the transmitted audio from the electronic device;

The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") comprises a set of earphones for playing transmitted audio received from an electronic device connected through Bluetooth:

Level U Pro

## Connecting via Bluetooth

### Bluetooth

#### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

[22]

### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

**1 Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.

When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.

**2 Other device** Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.

**3 Other device** Tap **Samsung Level U Pro (0000)** from the list.

[22]

Level U Pro ANC

## Connecting via Bluetooth

### Bluetooth

#### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

[18]

### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.

When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.

- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.

- 3 **Other device** Tap **Samsung Level U Pro ANC (0000)** from the list.

[18]

**36[f]** receiving external audio from a microphone; and

The Samsung Level U Pro Active Noise Canceling ("ANC") comprises a set of earphones with a microphone for receiving external audio:

Level U Pro

The 13mm Dynamic and 13mm Piezo speaker units deliver high-quality, clear sound. The dual-microphone noise reduction and echo cancellation reduce outside sound interference and feedback during calls.

[21]

Level U Pro ANC

## About This Product

Level U PRO with Active Noise Cancellation eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise, cancelling it out so that only your audio reaches the speakers.

[19]

With its powerful ANC technology and two-way speakers, the LEVEL U Pro ANC provides studio-quality sound. Rather than just drowning out ambient sounds around you, the LEVEL U Pro ANC actually picks up those external noises with two external microphones, analyzes them, and creates inverted sound waves to cancel out those noises, reducing the noise going into your ears. The active noise cancellation of the LEVEL U Pro ANC is up to 90 percent effective, reducing outside sounds by up to 20 dB. The result means you can enjoy crystal-clear sound, without the distraction of exterior noises.

[20]

**36[g]** adjusting a volume level in the first earphone and the second earphone of one of the transmitted audio and the external audio.

The Samsung Level U Pro Active Noise Canceling ("ANC") comprise a set of control buttons for adjusting a volume level of the transmitted audio in the first earphone and the second earphone:

Level U Pro

# Easy to Use controls

Control volume, play/pause, track advance and phone from easy to use control buttons.

[21]

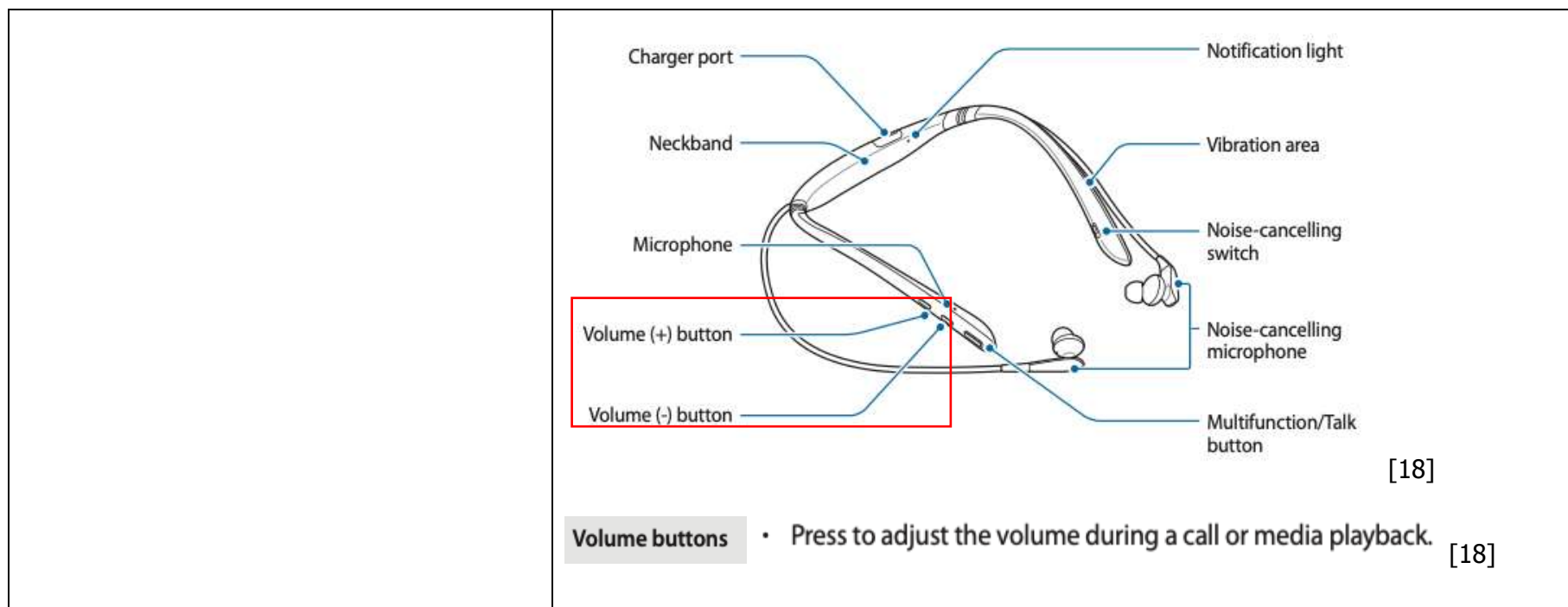


Button	Short Press	Long Press
+	Volume UP	REW (1sec)
-	Volume DOWN	FWD (1sec)
Play/Pause	Play/Pause	Pairing (3sec)



[21]



Level U Pro ANC







Claim 37	Evidence
<b>37.</b> The method of claim 36, wherein the first earphone is coupled to the second earphone by a magnet.	<p>The Samsung Level U Pro and Level U Pro ANC comprise a first earphone coupled to the second earphone by a magnet:</p> <div data-bbox="919 326 1089 363"><u>Level U Pro</u></div> <div data-bbox="1507 326 1745 363"><u>Level U Pro ANC</u></div> <div data-bbox="842 412 1234 467"><p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p></div> <div data-bbox="1020 477 1220 724"></div> <div data-bbox="835 745 886 784">[9]</div> <div data-bbox="1402 418 1778 474"><p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p></div> <div data-bbox="1577 483 1766 714"></div> <div data-bbox="1476 745 1547 784">[10]</div>

Claim 38	Evidence
<b>38[pre]</b> A method of operating an electronic device comprising:	The preamble is not limiting.
<b>38[a]</b> detecting an engagement status of a magnetic surface of a first earphone with a magnetically attractable surface of a second earphone;	<p>The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") can detect the engagement status of a magnetic surface of a first earphone with a magnetically attractable surface of a second earphone:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><u>Level U Pro</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[9]</p> </div> <div style="text-align: center;"> <p><u>Level U Pro ANC</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[10]</p> </div> </div> <p style="text-align: center;"><u>Level U Pro</u></p>

# Style & Performance

The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

[21]

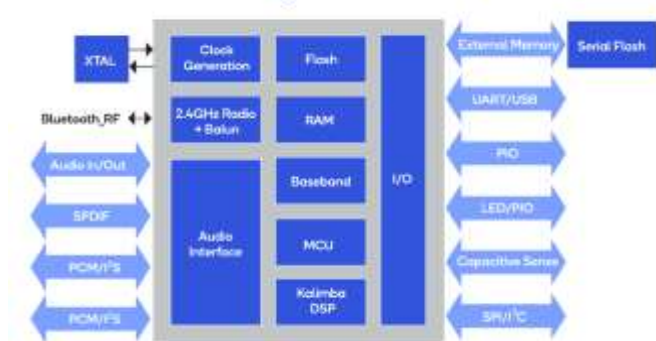
Level U Pro ANC

	<h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>
<p><b>38[b]</b> sending an activation signal to an electronic device when a magnetic decoupling is detected as the magnetic surface of the first earphone is removed and decoupled from the magnetically attractable surface of the second earphone, wherein the activation signal causes transmitted audio to be played in the first earphone and the second earphone;</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected:</p> <p>On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/ I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

#### Level U Pro

#### Level U Pro ANC

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro (0000) from the list.

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

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- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro ANC (0000) from the list.

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

### Level U Pro



[13]



## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SAMSUNG UHQ AUDIO**  
ONCE HEARD, YOU'LL KNOW

Ultra High Quality Audio (UHQ) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQ is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQ by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and PB splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with **Sound Share**, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**How Noise Cancellation Works**  
Microphone detects incoming ambient noise  
Sound is recorded and sent to noise cancellation circuitry  
Inverted ANC wave cancels ambient sound out  
Noise cancelling circuitry detects noise and switches to operate

**UHQ AUDIO (24BIT BLUETOOTH)**  
SUPERIOR AUDIO FIDELITY

Frequency  
Time  
■ Actual Sound ■ Bluetooth Standard ■ UHQ Audio (Level U Pro ANC)

**Battery Life\***  
Up to 6 hrs talk/play and  
20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**Flexible Uniflex® Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
deliver high-quality, clear sound

Includes 4 sets of Ear Gels  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec)
[Magnet]	Volume Up	Previous Track
[Magnet]	Volume Down	Next Track
[Magnet]	Play/Pause	Toggle Mode

**Samsung LEVEL**

**SAMSUNG LEVEL APP COMPATIBLE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text to Speech and more.  
Search Samsung Level on the Google Play® store

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels),  
Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/usa/support](http://www.samsung.com/usa/support) for standard  
1-yr limited warranty/dispute resolution info.  
[www.samsung.com](http://www.samsung.com)

Other items supplied  
See individual article for country of origin  
Packaged in Vietnam

GH69-27374A370X

Ver: 0316-LUANC-n-1

[14]



**38[c]** sending a deactivation signal to the electronic device when the magnetic surface of the first earphone is again coupled to the magnetically attractable surface of the second earphone, wherein the deactivation signal causes the transmitted audio to stop being played in the first earphone and the second earphone; and

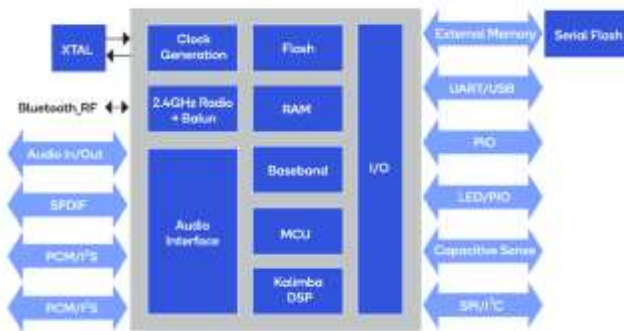
The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected:

On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives a deactivation signal when the earphones are magnetically coupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5; Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

Level U ProLevel U Pro ANC

	<div data-bbox="840 219 1257 264"> <h2>Connecting via Bluetooth</h2> </div> <div data-bbox="840 302 957 331"> <h3>Bluetooth</h3> </div> <div data-bbox="840 355 987 380"> <h4>About Bluetooth</h4> </div> <div data-bbox="840 384 1344 459"> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> </div> <div data-bbox="840 485 1161 518"> <h3>Connecting to other devices</h3> </div> <div data-bbox="840 524 1190 547"> <p>This headset is compatible with Bluetooth-enabled devices.</p> </div> <div data-bbox="840 557 1386 745"> <ol style="list-style-type: none"> <li>1 <b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li>2 <b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li>3 <b>Other device</b> Tap Samsung Level U Pro (0000) from the list.</li> </ol> </div> <div data-bbox="1474 212 1892 256"> <h2>Connecting via Bluetooth</h2> </div> <div data-bbox="1474 292 1596 319"> <h3>Bluetooth</h3> </div> <div data-bbox="1474 344 1625 367"> <h4>About Bluetooth</h4> </div> <div data-bbox="1474 371 1971 443"> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> </div> <div data-bbox="1419 498 1751 531"> <h3>Connecting to other devices</h3> </div> <div data-bbox="1419 537 1778 560"> <p>This headset is compatible with Bluetooth-enabled devices.</p> </div> <div data-bbox="1419 570 1974 756"> <ol style="list-style-type: none"> <li>1 <b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li>2 <b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li>3 <b>Other device</b> Tap Samsung Level U Pro ANC (0000) from the list.</li> </ol> </div> <div data-bbox="829 834 1984 943"> <p>On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.</p> </div> <div data-bbox="1281 977 1463 1018"> <p><u>Level U Pro</u></p> </div>
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**SAMSUNG**  
**Level** U PRO

**SAMSUNG UHQ AUDIO ON-TO-AUTODYN™**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 3x wider frequency range than standard CD-quality wireless sound. Combined with noise-isolating ear gels, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UHQ Audio on-TO-AUTODYN™**  
SUPERIOR AUDIO FIDELITY



Flexible (Unbreak) Joints  
to move around the neck, comfort

Battery life\* - up to 9 hrs talk/  
7 hrs play/100 hrs standby

13mm Dynamic and  
13mm Piezo Speaker Units  
deliver high quality,  
clear sound

Includes 4 sets of Ear Gels  
S, M, L + Pre-installed Manual

**VOICE & EXTENSIBILITY**  
The ergonomic around the neck design of Level U Pro provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionally intuitively by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**REMOTE CONTROLS**



Button	Short Press	Long Press (1 sec)
[Up Arrow]	Volume Up	Previous Track
[Down Arrow]	Volume Down	Next Track
[Touch Area]	Play/Pause	S Voice

**SAMSUNG LEVEL APP COMPATIBLE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text-to-Speech and more. Search Samsung Level on the Google Play™ store.

**PACKAGE CONTENTS**  
Level U Pro, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

For detailed warranty/dispute procedures/other info:  
[www.samsung.com/us/support](http://www.samsung.com/us/support)  
Ver. 0316-01PRO-0-4

**Barcode:** XD01TZSA15  
Samsung Level U Pro Blue - 16mm UHQ Audio - Bronze Tone

[13]

## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**NEW HEADSET CANCELLATION WORKS**  
Microphone detects incoming ambient noise. Sound is processed and sent to noise cancellation circuitry. Inverted ANC wave cancels unwanted sound out. Noise cancelling circuitry sends wave out inverted to speaker.

**SAFELY UNIQ AUDIO OVER BLUETOOTH**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UNIQ AUDIO (OVER BLUETOOTH) SUPERIOR AUDIO FIDELITY**  
Graph showing frequency response from 20Hz to 20kHz. UHQA Audio (Level U Pro ANC) shows a wider and flatter frequency response compared to Actual Sound and Bluetooth Standard.

**BATTERY LIFE\***  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**Flexible Urethane Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 15mm Piezo Speaker Units**  
deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (3 sec)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Toggle Mode

**Other Item(s) included:**  
See individual article for country of origin.  
Packaged in Vietnam

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/vietnam/level](http://www.samsung.com/vietnam/level) for standard 1-yr limited warranty/dispute resolution info.  
[www.samsung.com](http://www.samsung.com)

Ver: 0316-LUANC-n-1

GS69-2737AA3101

Other Item(s) included:  
See individual article for country of origin.  
Packaged in Vietnam

Barcode and QR code area with text: BLUEBERRY INNOVATION (2018-08-08), MANUFACTURED BY: SAMSUNG, MANUFACTURE DATE: 2017-05-24, MADE IN VIETNAM/PACKAGED IN VIETNAM, S/N: APT02026100110, S/N: APT02026100110, S/N: APT02026100110

[14]

**38[d]** operating the electronic device based upon the engagement status of the magnetic surface of the first earphone with the magnetically attractable surface of the second earphone.

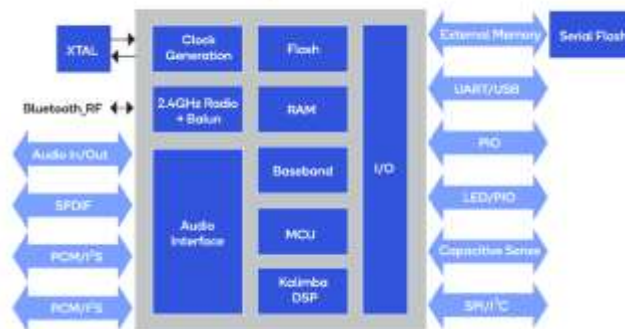
The Samsung Level U Pro and Level U Pro ANC can operate (e.g. Controlling calls and music functionality) the electronic device based upon the engagement status of the magnetic surface of the first earphone with the magnetically attractable surface of the second earphone;

On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

Level U Pro





[13]

Level U Pro ANC



**SAMSUNG Level U PRO ANC**

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**How Active Noise Cancellation Works**  
Microphone detects incoming ambient noise. Inverted ANC wave cancels out noise and out. Sound is increased and sent to your earbuds. Noise canceling capability allows you to adjust to operate.

**SAVE LINE, UNIQ A UNIQ OVER BUILT TOOTH**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UNIQ AUDIO OVER BLUETOOTH SUPERIOR AUDIO FIDELITY**

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and P2 splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/usa/support](http://www.samsung.com/usa/support) for standard 1-yr limited warranty & dispute resolution info.

[www.samsung.com](http://www.samsung.com)

**Battery Life\***  
Up to 6 hrs. talk/play and 20 hrs. standby with ANC on  
Up to 8.5 hrs. talk/play with ANC off

**Flexible Urethane Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
Deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec.)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Take to Me

**OTHER INFORMATION**  
Other item compared: See individual article for country of origin.  
Packaged in Vietnam

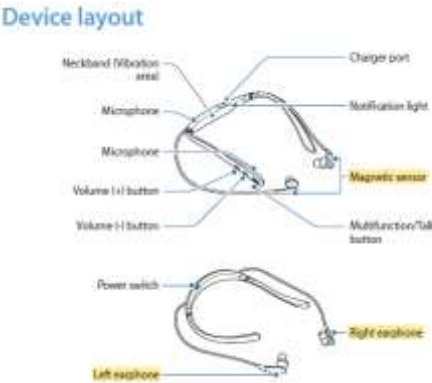

**QR CODE**  
GNS9-27374A37X

**Other item compared**  
See individual article for country of origin.  
Packaged in Vietnam

**Ver. 0316-LUANC-n-1**

[14]

On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.

Claim 39	Evidence
<b>39[pre]</b> An audio system comprising:	The preamble is not limiting.
<b>39[a]</b> a first earphone;	<p>The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") comprise a first earphone:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><u>Level U Pro</u></p>  <p>[9]</p> </div> <div style="text-align: center;"> <p><u>Level U Pro ANC</u></p>  <p>[10]</p> </div> </div>

**39[b]** a second earphone removably coupled to the first earphone; and

The Samsung Level U Pro and Level U Pro ANC comprise a second earphone removably coupled to the first earphone:

Level U Pro

Connecting the earphones

Connect the earphones to each other using the built-in magnets.



[9]

Level U Pro ANC

Connecting the earphones

Connect the earphones to each other using the built-in magnets.



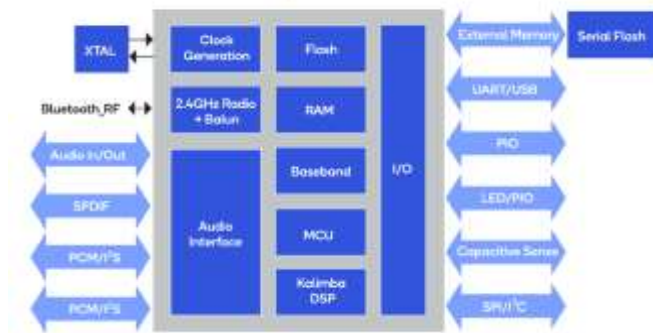
[10]

<p><b>39[c]</b> an electronic device controller configured to receive and activation signal when a magnetic decoupling is detected as the second earphone is removed and decoupled from the first earphone, wherein the activation signal causes transmitted audio to be played in the first earphone and the second earphone, wherein the electronic device controller receives a deactivation signal when the second earphone is again coupled to the first earphone, wherein the deactivation signal causes the transmitted audio to stop being played in the first earphone and the second earphone.</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected:</p> <p>On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/ I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>
--	---



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

#### Level U Pro

#### Level U Pro ANC

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro (0000) from the list.

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro ANC (0000) from the list.

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

### Level U Pro





## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SOUND SHARING**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphones support Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and P2 splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**PACKAGE CONTENTS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-Installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/level](http://www.samsung.com/level) for standard 1-yr limited warranty & dispute resolution & other info.  
[www.samsung.com](http://www.samsung.com)

**Battery Life**  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**How Noise Cancelling Works**  
Microphone detects incoming noise  
Sound is detected and sent to noise cancelling chip  
Inverted ANC wave cancels out unwanted sound  
Noise cancels out clearly & easily  
Call switch for update

**UHQA Audio over Bluetooth**  
SUPERIOR AUDIO FIDELITY

Actual Sound | Bluetooth Sound | UHQA Audio (Level U Pro ANC)

**Flexible Uniflex Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
Deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-Installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec.)
[Magnet]	Start/Pause Music	Answer/End Call
[Magnet]	Volume Up	Previous Track
[Magnet]	Volume Down	Next Track
[Magnet]	Play/Pause	Take to Mode

**Samsung Level**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text to Speech and more.  
Search Samsung Level on the Google Play™ store

**OTHER INFORMATION**  
Set individual article for country of origin  
Packaged in Vietnam  
Ver. 0316-LUANC-01

GH69-27324A370X



Other items imported  
Set individual article for country of origin  
Packaged in Vietnam

MADE IN VIETNAM

[14]



	On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.
--	---

Claim 40	Evidence
<b>40[pre]</b> A method of operating an electronic device comprising:	The preamble is not limiting.
<b>40[a]</b> detecting an engagement status of a first earphone with a second earphone;	<p>The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") can detect the engagement status of a magnetic surface of a first earphone with a magnetically attractable surface of a second earphone:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><u>Level U Pro</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[9]</p> </div> <div style="text-align: center;"> <p><u>Level U Pro ANC</u></p> <p>Connecting the earphones Connect the earphones to each other using the built-in magnets.</p>  <p>[10]</p> </div> </div> <p style="text-align: center;"><u>Level U Pro</u></p>

# Style & Performance

The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

[21]

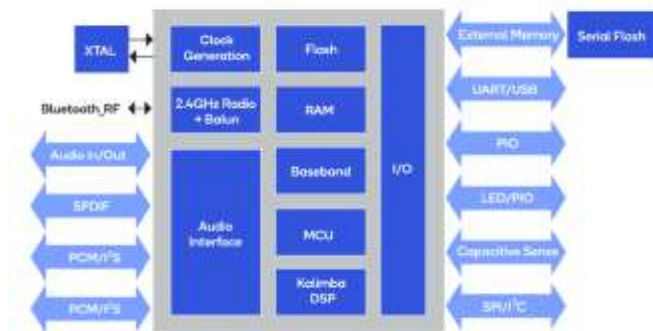
Level U Pro ANC

	<h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>
<p><b>40[b]</b> sending an activation signal to an electronic device when a magnetic decoupling is detected as the first earphone is removed and decoupled from the second earphone, wherein the activation signal causes transmitted audio to be played in the first earphone and the second earphone;</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected:</p> <p>On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/ I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

#### Level U Pro

#### Level U Pro ANC

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro (0000) from the list.

### Connecting via Bluetooth

#### Bluetooth

##### About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

#### Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

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When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro ANC (0000) from the list.

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

Level U Pro

[13]



## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**SAMSUNG UHQ AUDIO**  
**OVER BLUETOOTH**  
Ultra High Quality Audio (UHQ) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQ is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQ by visiting the product page on [samsung.com](http://samsung.com).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and PB splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with **Sound Share**, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**SAMSUNG LEVEL APP CONTROLLABLE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text to Speech and more.  
Search Samsung Level on the Google Play® store

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-Installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/vietnam/level](http://www.samsung.com/vietnam/level) for standard 1-yr limited warranty/dispute resolution info.  
[www.samsung.com](http://www.samsung.com)

**Battery Life\***  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**How Noise Cancellation Works**  
Microphone detects incoming ambient noise  
Sound is converted and sent to noise cancellation circuitry  
Inverted ANC wave cancels ambient sound out  
Noise cancelling circuitry converts earbud switch to speaker

**UHQ AUDIO OVER BLUETOOTH**  
SUPERIOR AUDIO FIDELITY

**Flexible Uniflex® Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-Installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec)
[Up Arrow]	Volume Up	Previous Track
[Down Arrow]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Toggle Mode

Other items simplified. See individual article for country of origin.  
Packaged in Vietnam

GH69-27374A370X

Ver: 0316-LUANC-n-1

[14]



**40[c]** sending a deactivation signal to the electronic device when the first earphone is again coupled to the second earphone, wherein the deactivation signal causes the transmitted audio to stop being played in the first earphone and the second earphone; and

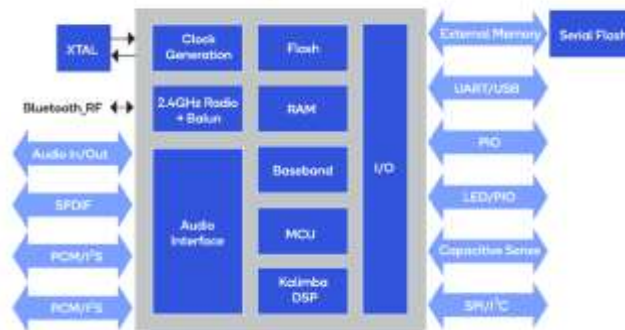
The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected:

On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives a deactivation signal when the earphones are magnetically coupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, the LUP products are compatible with Samsung Galaxy products, all of which also include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+. On information and belief, the LUP ANC products are compatible Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5; Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, and Galaxy S10e. On information and belief, the LUP and LUP ANC products are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

Level U ProLevel U Pro ANC

	<div data-bbox="840 219 1257 264"> <h2>Connecting via Bluetooth</h2> </div> <div data-bbox="840 302 957 331"> <h3>Bluetooth</h3> </div> <div data-bbox="840 355 987 380"> <h4>About Bluetooth</h4> </div> <div data-bbox="840 384 1344 459"> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> </div> <div data-bbox="840 485 1161 518"> <h3>Connecting to other devices</h3> </div> <div data-bbox="840 524 1190 547"> <p>This headset is compatible with Bluetooth-enabled devices.</p> </div> <div data-bbox="840 557 1386 745"> <ol style="list-style-type: none"> <li>1 <b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li>2 <b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li>3 <b>Other device</b> Tap Samsung Level U Pro (0000) from the list.</li> </ol> </div> <div data-bbox="1474 212 1892 254"> <h2>Connecting via Bluetooth</h2> </div> <div data-bbox="1474 292 1596 319"> <h3>Bluetooth</h3> </div> <div data-bbox="1474 344 1623 367"> <h4>About Bluetooth</h4> </div> <div data-bbox="1474 371 1971 443"> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> </div> <div data-bbox="1419 498 1751 531"> <h3>Connecting to other devices</h3> </div> <div data-bbox="1419 537 1778 558"> <p>This headset is compatible with Bluetooth-enabled devices.</p> </div> <div data-bbox="1419 568 1974 756"> <ol style="list-style-type: none"> <li>1 <b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li>2 <b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li>3 <b>Other device</b> Tap Samsung Level U Pro ANC (0000) from the list.</li> </ol> </div> <div data-bbox="829 834 1984 943"> <p>On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.</p> </div> <div data-bbox="1281 977 1463 1018"> <p><u>Level U Pro</u></p> </div>
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**SAMSUNG**  
**Level** U PRO

**SAMSUNG UHQ AUDIO ON-TO-AUTODYN™**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 3x wider frequency range than standard CD-quality wireless sound. Combined with noise-isolating ear gels, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UHQ Audio on-TO-AUTODYN™**  
SUPERIOR AUDIO FIDELITY



Flexible (Soft) Ear Gels  
across around the neck, comfort

Battery life\* - up to 9 hrs talk/  
7 hrs play/100 hrs standby

13mm Dynamic and  
13mm Piezo Speaker Units  
deliver high quality,  
clear sound

Includes 4 sets of Ear Gels  
S, M, L + Pre-installed Manual

**VOICE & EXTENSIBILITY**  
The ergonomic around the neck design of Level U Pro provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality intuitively by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with **Sound Share**, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**REMOTE CONTROLS**

Button	Short Press	Long Press (1 sec)
	Volume Up	Previous Track
	Volume Down	Next Track
	Play/Pause	S Voice

**SAMSUNG LEVEL APP COMPATIBLE**  
Samsung Level is a downloadable application that allows you to adjust detailed sound settings, Text-to-Speech and more. Search Samsung Level on the Google Play™ store.

**INCLUDES CONTENT**  
Level U Pro, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels),  
Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/level](http://www.samsung.com/level) for detailed T/F  
listed warranty/duplicate procedures/other info  
[www.samsung.com/level](http://www.samsung.com/level)  
Ver. 0316-01PRO-04

  
X001TZSA15  
Samsung Level U Pro Blue - 1st and UHQ Audio - Bronze  
Note

[13]

## Level U Pro ANC

**SAMSUNG**  
**Level** U PRO ANC

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**NEW HEADSET CANCELLATION WORKS**  
Microphone detects incoming ambient noise. Sound is processed and sent to noise cancelling circuit. Noise cancelling circuit sends out opposing sound wave to cancel out noise.

**SAFETY LINE: UHQ AUDIO OVER 24BIT**  
Ultra High Quality Audio (UHQ) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQ is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQ by visiting the product page on [samsung.com](http://samsung.com).

**UHQ AUDIO (OVER 24BIT) SUPERIOR AUDIO FIDELITY**  
Graph showing frequency response (Hz) vs. Amplitude (dB) for Actual Sound, Background Noise, and UHQ Audio (Level U Pro ANC).

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and PS splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (3 sec)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Toggle Mode

**Battery Life\***  
Up to 6 hrs talk/play and 20 hrs standby with ANC on  
Up to 8.5 hrs talk/play with ANC off

**Includes 4 sets of Ear Gels (S, M, L + Pre-installed Medium)**

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/level](http://www.samsung.com/level) for standard 1-yr limited warranty/dispute resolution info.

[www.samsung.com](http://www.samsung.com)

Other items supplied: See individual article for country of origin. Packaged in Vietnam.

Ver: 0316-LUANC-n-1

QR Code and Barcode: GS49-2737AA3101

Other items supplied: See individual article for country of origin. Packaged in Vietnam.

[14]

**40[d]** operating the electronic device based upon the engagement status of the first earphone with the second earphone.

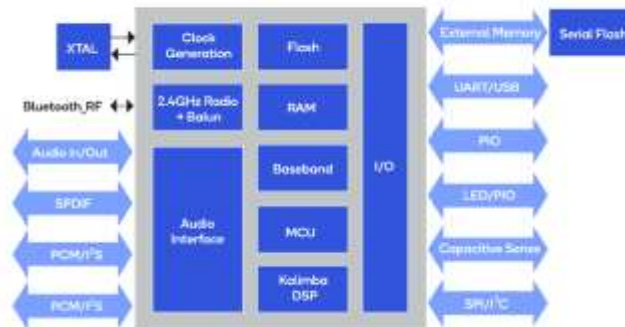
The Samsung Level U Pro and Level U Pro ANC can operate (e.g. Controlling calls and music functionality) the electronic device based upon the engagement status of the magnetic surface of the first earphone with the magnetically attractable surface of the second earphone;

On information and belief, the Level U Pro and Level U Pro ANC products use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]



[11]

CSR8675 Block Diagram



[12]

On information and belief, when the earphones of the Level U Pro and Level U Pro ANC are disconnected from each other, the CSR SoC receives an activation signal. On information and belief, the activation signal causes transmitted audio to be played in the first earphone and the second earphone.

Level U Pro





[13]

Level U Pro ANC



**SAMSUNG Level U PRO ANC**

**ACTIVE NOISE CANCELLATION**  
Eliminates unwanted ambient noise from your music. When the headset detects outside noise, it produces an opposing sound wave designed to counteract the incoming noise – cancelling it out so that only your audio reaches the speakers.

**NEW Hybrid Cancellation Works**  
Microphone detects incoming ambient noise. Inverted ANC wave cancels external sound out. Sound is processed and sent to your earbuds so that only your audio reaches the speakers.

**Ultra High Quality Audio (UHQA)**  
Ultra High Quality Audio (UHQA) technology delivers a true 24bit digital audio experience with up to 2x wider frequency range than standard CD-quality wireless sound. Combined with ANC, listeners experience vivid, concert hall sound. UHQA is compatible with select Samsung Galaxy devices. Customers are advised to check if their smartphone supports Bluetooth UHQA by visiting the product page on [samsung.com](http://samsung.com).

**UNIQ AUDIO OVER BLUETOOTH**  
SUPERIOR AUDIO FIDELITY

**STYLE & PERFORMANCE**  
The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and P2 splash & sweat resistance\*\* make it ideal for the active listener. Intuitively control call and music functionality by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

**PACKAGE CONTAINS**  
Level U PRO ANC, 4 Sets of Ear Gels (S, M, L + Pre-installed Gels), Micro USB Charging Cable, Quick Start Guide

See [www.samsung.com/usa/support](http://www.samsung.com/usa/support) for standard 1-yr limited warranty & dispute resolution info.

[www.samsung.com](http://www.samsung.com)

**Battery Life\***  
Up to 6 hrs. talk/play and 20 hrs. standby with ANC on  
Up to 8.5 hrs. talk/play with ANC off

**Flexible Urethane Joints**  
Increase around-the-neck comfort

**Active Noise Cancellation On/Off switch**

**13mm Dynamic and 13mm Piezo Speaker Units**  
Deliver high-quality, clear sound

**Includes 4 sets of Ear Gels**  
S, M, L + Pre-installed Medium

**EASY TO USE CONTROLS**

Button	Short Press	Long Press (5 sec.)
[Volume Up]	Volume Up	Previous Track
[Volume Down]	Volume Down	Next Track
[Play/Pause]	Play/Pause	Take to Me

**OTHER INFORMATION**  
Other item(s) imported. See individual article for country of origin.  
Packaged in Vietnam

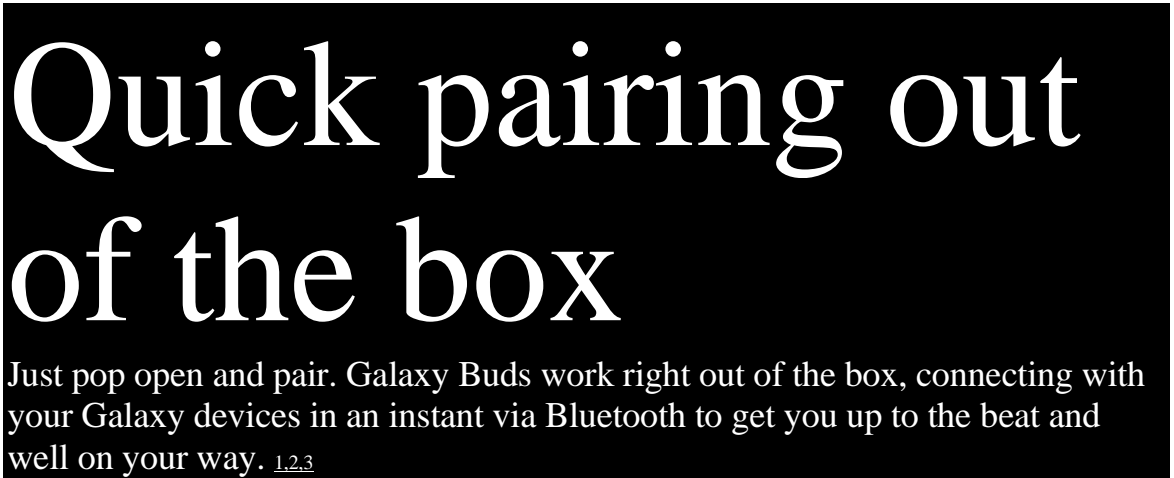
**QR CODE**  
GNS9-27374A37X

**Other item(s) imported. See individual article for country of origin. Packaged in Vietnam**

**Ver. 0316-LUANC-n-1**

[14]

On information and belief, when the magnetic earphones are coupled to each other, the CSR SoC receives a deactivations signal. On information and belief, the deactivation signal causes audio to stop playing in the first and second earphones.

Claim 43	Evidence
<p><b>43.</b> The audio system of claim 5 wherein the activation signal causes the electronic device to start transmitting audio to be played in the headphones.</p>	<p>Samsung Galaxy Buds comprise a headphones controller coupled to receive an activation signal causing the electronic device to start transmitting audio to be played in the headphones:</p>  <p>[6]</p>

**Android & iOS compatible**

The Galaxy Buds pair with both  
Android and iOS compatible  
smartphones via Bluetooth  
connection.<sup>4</sup>

[7]

Also, Samsung Galaxy buds detect if one or more earbuds are decoupled from one or more of the magnetically attractable surfaces attached to the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnetically attractable surfaces attached to the holder body, the music stops automatically.

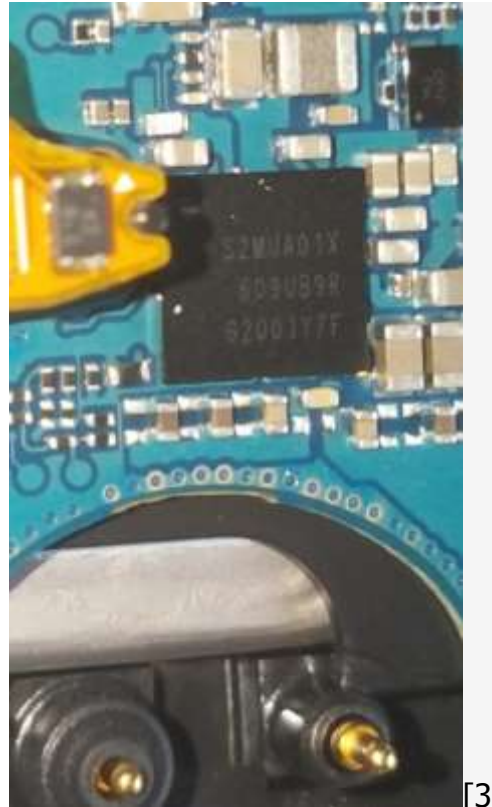
The Galaxy Buds will detect how many earbuds are in its case and will switch the sound output to mono or stereo based on how many earbuds are in the charging case. If you put both Galaxy Buds into the charging case, the music will stop automatically.



[24]

Samsung Galaxy Buds+ comprise a headphones controller coupled to receive an activation signal causing the electronic device to start transmitting audio to be played in the headphones:

Galaxy Buds+ also include Samsung S2MUA01X chips. On information and belief, the S2MUA01X chips include a controller unit.



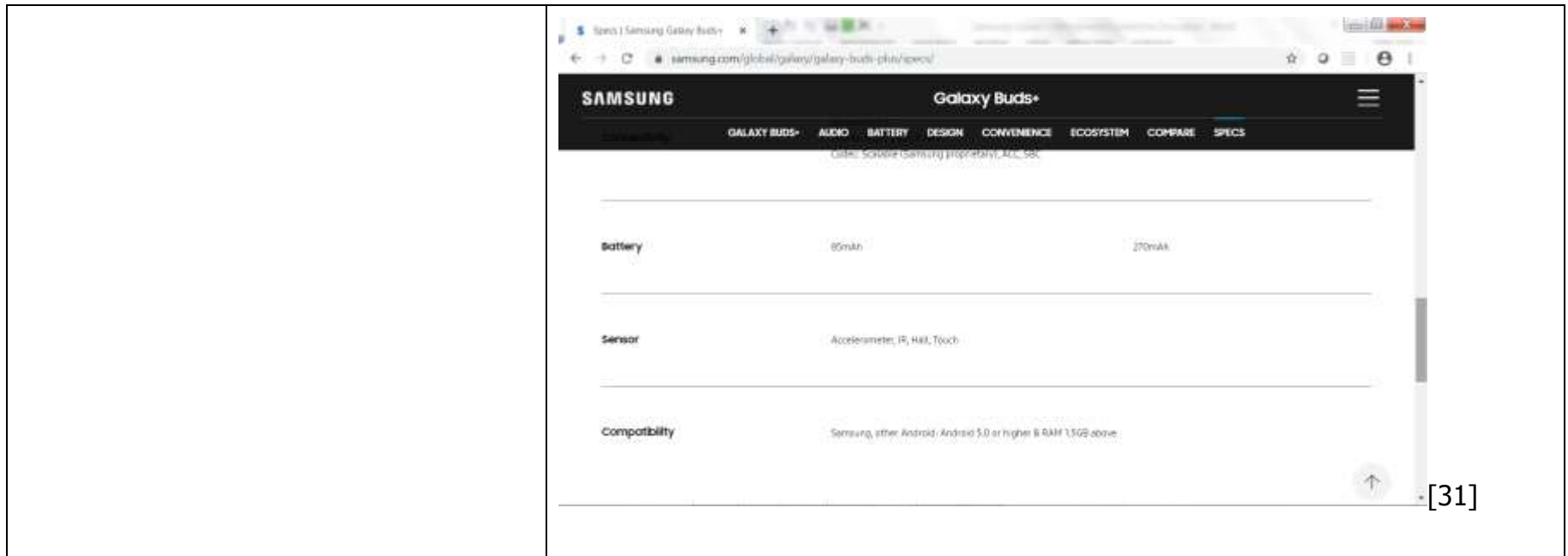
[32]

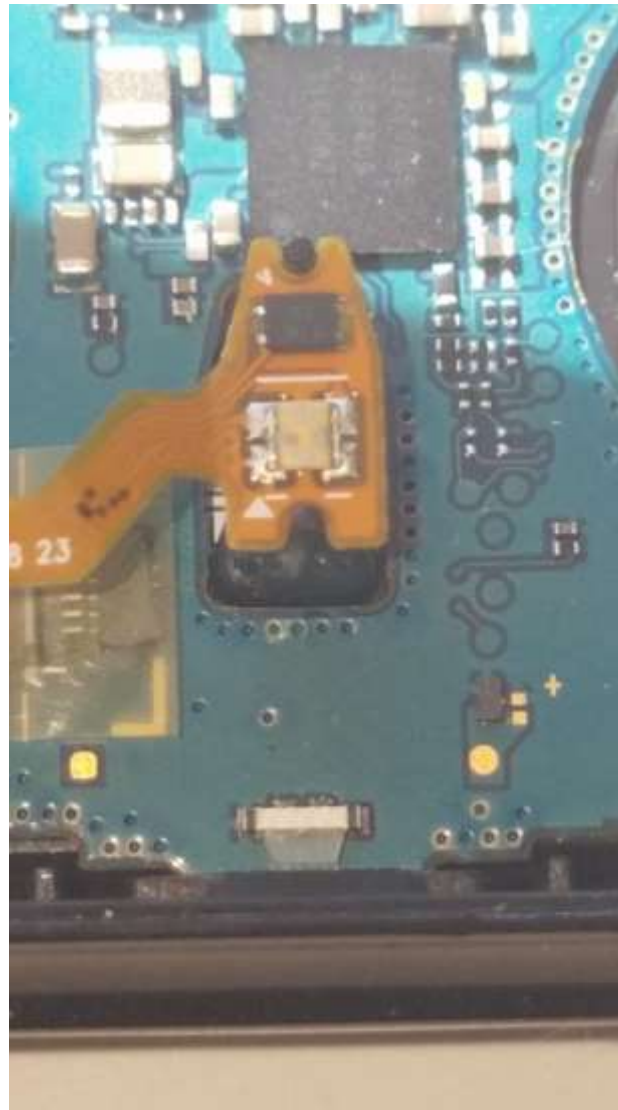
On information and belief, BCM43015 System on Chip includes a control unit and a sensor hub. On information and belief, the Samsung S2MUA01X chips and the control unit and/or sensor hub of the BCM43015 System on Chip are responsive to a magnetic Hall sensor:

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]





[32]

Also, Samsung Galaxy Buds+ detect if one or more earbuds are decoupled from one or more of the magnets comprising the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnets comprising the holder body, the audio stops.

The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds+ earphones are deactivated and cannot play audio when in the holder.

Galaxy Buds+ are compatible with smartphones and tablets running Android 5.0 or higher, including without limitation Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, Galaxy S10e, S20, S20+ and S20 Ultra 5G.

In addition, Galaxy Buds+ are compatible with iPhone7 or later models with iOS10 or higher.

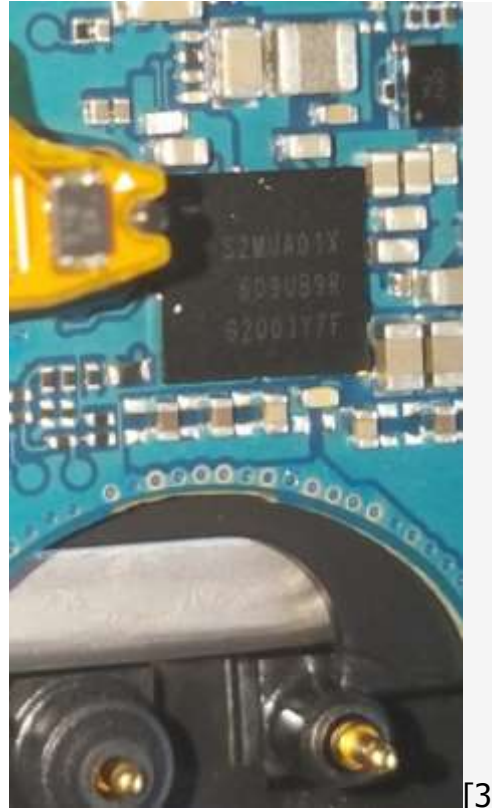
<sup>10</sup> Compatible with smartphones and tablet running Android 5.0 or higher and with more than 1.5GB of RAM. Also compatible with iPhone7 or later models with the iOS 10 or higher. [34]



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Claim 44	Evidence
<p><b>44.</b> The audio system of claim 43 wherein a deactivation signal is sent when one or more of the magnetic second surfaces is again coupled within one of the one or more magnetically attractable first surfaces and further wherein the deactivation signal causes the electronic device to stop transmitting audio to be played in the headphones.</p>	<p>Samsung Galaxy Buds comprise a headphones controller coupled to receive a deactivation signal when one or more of the magnetic second surfaces is again coupled to one of the one or more magnetically attractable first surfaces and further wherein the deactivation signal causes the electronic device to stop transmitting audio to be played in the headphones:</p> <p>The <b>Galaxy Buds</b> will detect how many earbuds are in its case and will switch the sound output to mono or stereo based on how many earbuds are in the charging case. If you put both <b>Galaxy Buds</b> into the charging case, the music will stop automatically.</p> <div data-bbox="842 846 1346 987"> </div> <p>[24]</p> <p>Samsung Galaxy Buds+ comprise a headphones controller coupled to receive a deactivation signal when one or more of the magnetic second surfaces is again coupled to one of the one or more magnetically attractable first surfaces and further wherein the deactivation signal causes the electronic device to stop transmitting audio to be played in the headphones:</p>

Galaxy Buds+ also include Samsung S2MUA01X chips. On information and belief, the S2MUA01X chips include a controller unit.



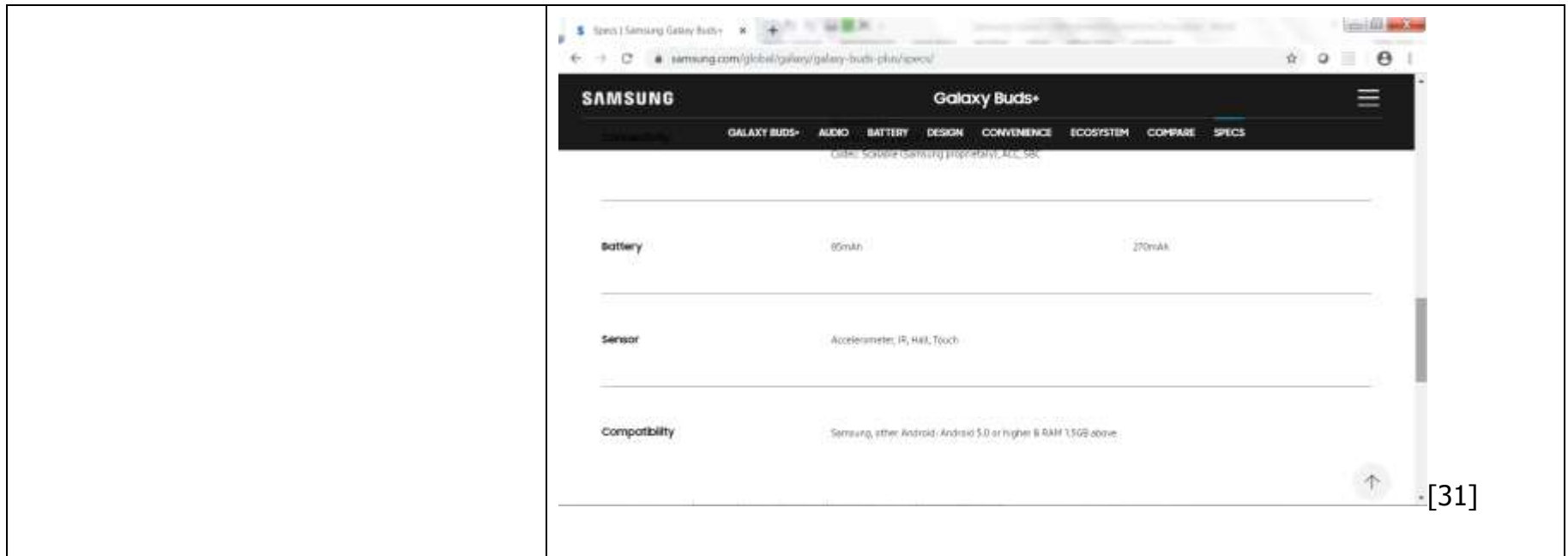
[32]

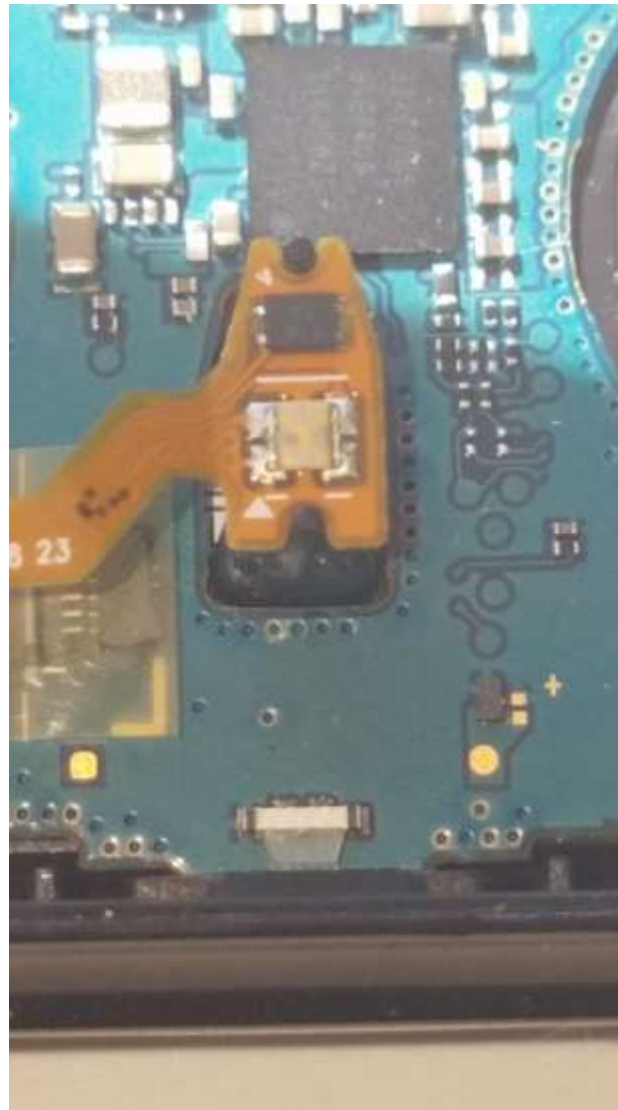
On information and belief, BCM43015 System on Chip includes a control unit and a sensor hub. On information and belief, the Samsung S2MUA01X chips and the control unit and/or sensor hub of the BCM43015 System on Chip are responsive to a magnetic Hall sensor:

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]





[32]

	<p>Also, Samsung Galaxy Buds+ detect if one or more earbuds are decoupled from one or more of the magnets comprising the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnets comprising the holder body, the audio stops.</p> <p>The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds+ earphones are deactivated and cannot play audio when in the holder.</p> <p>Galaxy Buds+ are compatible with smartphones and tablets running Android 5.0 or higher, including without limitation Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, Galaxy S10e, S20, S20+ and S20 Ultra 5G.</p> <p>In addition, Galaxy Buds+ are compatible with iPhone7 or later models with iOS10 of higher.</p> <p><sup>10</sup> Compatible with smartphones and tablet running Android 5.0 or higher and with more than 1.5GB of RAM. Also compatible with iPhone7 or later models with the iOS 10 or higher. [34]</p>
Claim 45	Evidence
<b>45.</b> The audio system of claim 1 wherein the activation signal is sent wirelessly.	Samsung Galaxy Buds comprise a headphones controller with Bluetooth pairing technology to send the activation signal wirelessly:

## Broadcom Wireless Audio Chip Powers Samsung Galaxy Buds

Broadcom BCM43014 delivers premium Bluetooth sound and unmatched battery life in ultra-compact footprint

SAN JOSE, Calif., Feb. 28, 2019 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today unveiled the BCM43014 chip enabling the Samsung Galaxy Buds to deliver a premium audio experience. The BCM43014 is a highly-integrated low power SoC that brings together unique innovations in Bluetooth, audio DSP and sensor hub technology to render rich audio while delivering up to six hours of Bluetooth streaming or five hours of voice calls.

[4]

Built on Broadcom's unique combination of deep semiconductor expertise and wireless audio engineering, the BCM43014 is engineered to meet the design requirements for in-ear wireless devices. In addition to Bluetooth 5, the chip is packed with innovative features and capabilities that:

- Allows for seamless integration of advanced acoustic algorithms that reduce background noise to deliver rich sound.
- Delivers synchronized audio to both the earbuds for various daily user scenarios using Broadcom's InConcert® technology to create a truly wireless experience.
- Innovates with a holistic low power system-level design that spans radio design, protocol optimization and software techniques.
- Seamlessly connects both Buds with phone and quickly switches between devices with Broadcom's advanced Bluetooth pairing technology to deliver continuity of content for the consumer.
- Enables the integration of the multi-dimensional sensors behind the convenient and intuitive user interface on the Buds.
- Facilitates slim earbud design by integrating multiple audio components into a single chip and reducing the overall bill of materials.

[4]

# Quick pairing out of the box

Just pop open and pair. Galaxy Buds work right out of the box, connecting with your Galaxy devices in an instant via Bluetooth to get you up to the beat and well on your way. <sup>1,2,3</sup>

[6]

On information and belief, Galaxy Buds are also compatible with other smartphones, including without limitation Apple iPhones, which also include a controller for receiving Bluetooth signals.

## **Android & iOS compatible**

The Galaxy Buds pair with both  
Android and iOS compatible  
smartphones via Bluetooth  
connection.<sup>4</sup>

[7]



Samsung Galaxy Buds comprise a headphones controller with Bluetooth pairing technology to send the activation signal wirelessly:

Galaxy Buds+ also include Samsung S2MUA01X chips. On information and belief, the S2MUA01X chips include a controller unit.

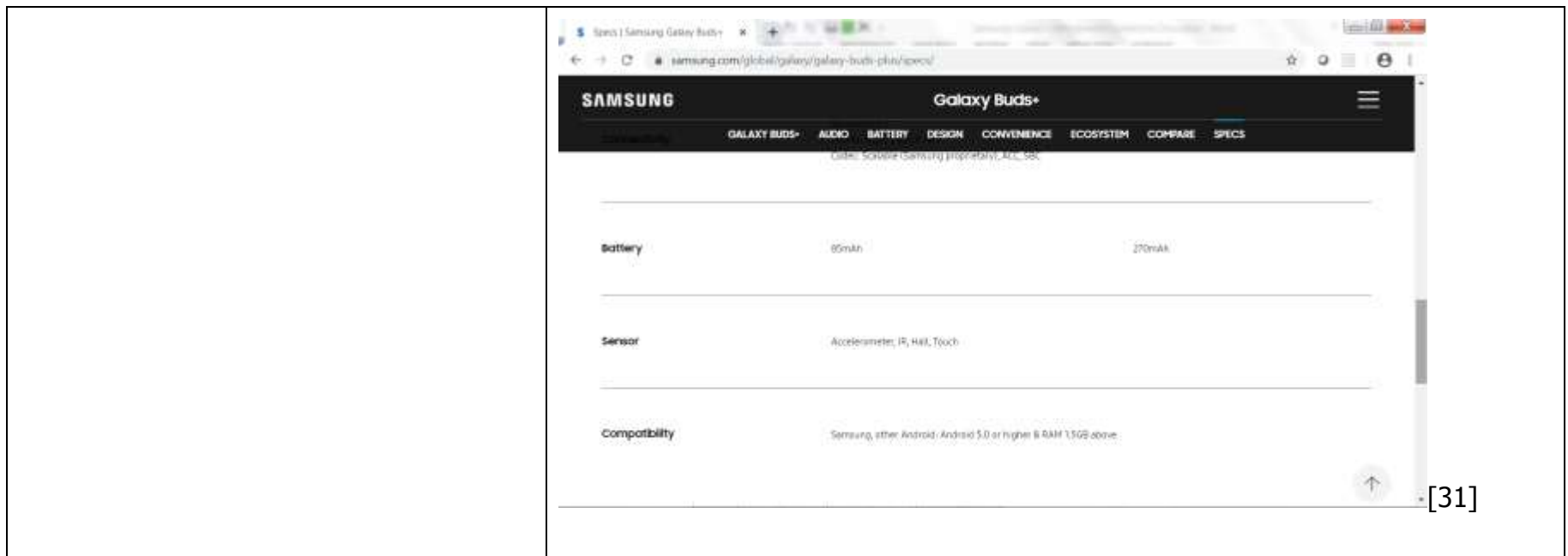


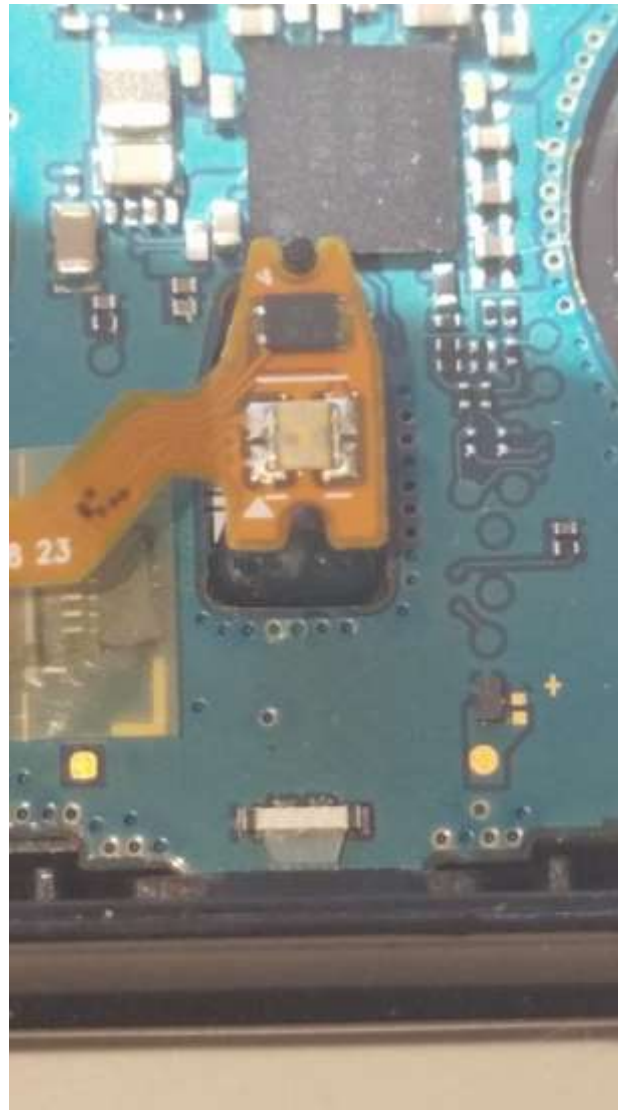
On information and belief, BCM43015 System on Chip includes a control unit and a sensor hub. On information and belief, the Samsung S2MUA01X chips and the control unit and/or sensor hub of the BCM43015 System on Chip are responsive to a magnetic Hall sensor:

The internal structure of the new Buds+ is similar to last year's model, but the 2020 entry does make better use of all of its internal space. This time, the 0.315Wh battery is supplied by EVE instead of Varta, and it, together with the main printed circuit board (PCB), reside in one half of the earbud. The other half of each earbud contains the charging contacts, an interfacing microphone, a proximity sensor, as well as the upgraded drivers which are reportedly more difficult to remove (and haven't been in the video). [26]



[25]





[32]

	<p>Also, Samsung Galaxy Buds+ detect if one or more earbuds are decoupled from one or more of the magnets comprising the holder body and accordingly control the sound output in the earbuds. Further, if one or more earbuds are coupled to one or more of the magnets comprising the holder body, the audio stops.</p> <p>The electronic device controller receives a deactivation signal when one or more of the set of earphones are coupled to one or more of the magnets. When paired to a Bluetooth device that is playing audio, one or both Galaxy Buds+ earphones are deactivated and cannot play audio when in the holder.</p> <p>Galaxy Buds+ are compatible with smartphones and tablets running Android 5.0 or higher, including without limitation Samsung Galaxy products, all of which include a controller configured to receive Bluetooth signals, including without limitation: Galaxy S7 Edge; Galaxy S7; Galaxy S8; and Galaxy S8+; Galaxy S9; Galaxy S9+; Galaxy Note 5Galaxy Note 8; Galaxy Note 9; Galaxy A6, Galaxy S10, Galaxy S10 Plus, Galaxy S10e, S20, S20+ and S20 Ultra 5G.</p> <p>In addition, Galaxy Buds+ are compatible with iPhone7 or later models with iOS10 or higher.</p> <p><sup>10</sup> Compatible with smartphones and tablet running Android 5.0 or higher and with more than 1.5GB of RAM. Also compatible with iPhone7 or later models with the iOS 10 or higher. [34]</p>
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Claim 46	Evidence
<p><b>46.</b> The method of claim 28 wherein the activation signal causes an incoming call to a telephone to be answered and connected and further wherein the transmitted audio comprises audio for the call.</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected and the activation signal further causes an incoming call to a telephone to be answered and further the transmitted audio comprises audio for the call:</p> <p style="text-align: right;"><u>Level U Pro</u></p> <hr/> <h1 style="text-align: center;">Style &amp; Performance</h1> <p>The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[21]</p> <p style="text-align: right;"><u>Level U Pro ANC</u></p>

## Style & Performance

The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

[19]

Claim 47	Evidence
<p><b>47.</b> The method of claim 46 wherein the deactivation signal causes an ongoing call through the telephone to be terminated.</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected and the deactivation signal further causes an ongoing call through the telephone to be terminated:</p> <p style="text-align: right;"><u>Level U Pro</u></p> <hr/> <h1 style="text-align: center;">Style &amp; Performance</h1> <p>The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash &amp; sweat resistance** make it ideal for the active listener. Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[21]</p>



Level U Pro ANC

## Style & Performance

The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

[19]

Claim 48	Evidence
<p><b>48.</b> The method of claim 28 wherein the activation signal causes the electronic device to start transmitting audio to be played in the headphones.</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected and the activation signal further causes the electronic device to start transmitting audio to be played in the headphones:</p> <p style="text-align: right;"><u>Level U Pro</u></p> <hr/> <h1 style="text-align: center;">Style &amp; Performance</h1> <p>The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[21]</p>

Level U Pro ANC

## Style & Performance

The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

[19]

Claim 49	Evidence
<p><b>49.</b> The method of claim 48 wherein the deactivation signal causes the electronic device to stop transmitting audio to be played in the headphones.</p>	<p>The Samsung Level U Pro and Level U Pro ANC comprise an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected and the deactivation signal further causes the electronic device to stop transmitting audio to be played in the headphones:</p> <p style="text-align: right;"><u>Level U Pro</u></p> <hr/> <h1 style="text-align: center;">Style &amp; Performance</h1> <p>The ergonomic around the neck design of Level U PRO provides a comfortable way to keep your music and calls accessible. Ultra-soft, ergonomic ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality intuitively by way of smart magnets in the earbuds – start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[21]</p>

Level U Pro ANC

## Style & Performance

The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash & sweat resistance\*\* make it ideal for the active listener. Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected. You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.

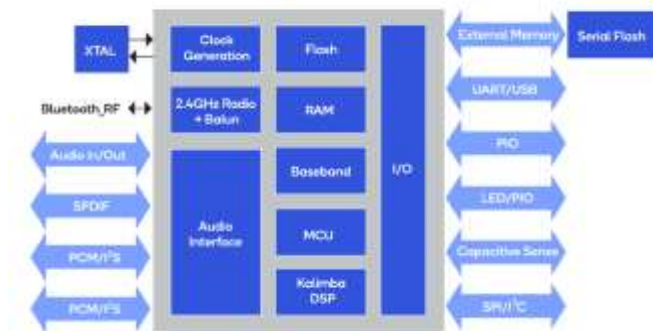
[19]

Claim 50	Evidence
<b>50.</b> The method of claim 28 wherein the activation signal is sent wirelessly.	<p>The Samsung Level U Pro and Level U Pro Active Noise Canceling ("ANC") comprises a CSR8675 Bluetooth audio systems on chip to send activation signal wirelessly:</p> <p>On information and belief, the Level U Pro ANC product use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/ I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>



[11]

CSR8675 Block Diagram



[12]

	<p style="text-align: center;"><u>Level U Pro</u></p> <h2 style="text-align: center;">Connecting via Bluetooth</h2> <h3>Bluetooth</h3> <p><b>About Bluetooth</b></p> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> <h3>Connecting to other devices</h3> <p>This headset is compatible with Bluetooth-enabled devices.</p> <ol style="list-style-type: none"> <li><b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li><b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li><b>Other device</b> Tap Samsung Level U Pro (0000) from the list.</li> </ol>	<p style="text-align: center;"><u>Level U Pro ANC</u></p> <h2 style="text-align: center;">Connecting via Bluetooth</h2> <h3>Bluetooth</h3> <p><b>About Bluetooth</b></p> <p>Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.</p> <h3>Connecting to other devices</h3> <p>This headset is compatible with Bluetooth-enabled devices.</p> <ol style="list-style-type: none"> <li><b>Headset</b> Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode. When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.</li> <li><b>Other device</b> Activate the Bluetooth feature and search for Bluetooth devices. For more information, refer to the other device's user manual.</li> <li><b>Other device</b> Tap Samsung Level U Pro ANC (0000) from the list.</li> </ol>
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Claim 51	Evidence
<p><b>51.</b> The audio system of claim 29 wherein the activation signal causes an incoming call to a telephone to be answered and connected and further wherein the transmitted audio comprises audio for the call.</p>	<p>The Samsung Level U Pro ANC comprises an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected and the activation signal further causes an incoming call to a telephone to be answered and further the transmitted audio comprises audio for the call:</p> <p style="text-align: center;"><u>Level U Pro ANC</u></p> <h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>

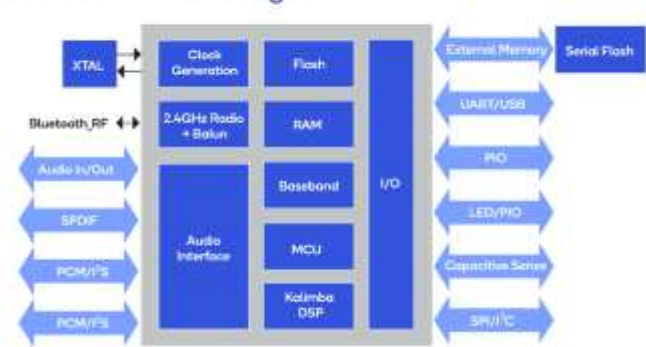
Claim 52	Evidence
<p><b>52.</b> The audio system of claim 51 wherein the deactivation signal causes an ongoing call through the telephone to be terminated.</p>	<p>The Samsung Level U Pro ANC comprises an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected and the deactivation signal further causes an ongoing call through the telephone to be terminated:</p> <p style="text-align: center;"><u>Level U Pro ANC</u></p> <h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>

Claim 53	Evidence
<p><b>53.</b> The audio system of claim 30 wherein the activation signal causes the electronic device to start transmitting audio to be played in the headphones.</p>	<p>The Samsung Level U Pro ANC comprises an electronic device controller configured to receive an activation signal when a magnetic decoupling of the headphones is detected and the activation signal further causes the electronic device to start transmitting audio to be played in the headphones.</p> <p style="text-align: center;"><u>Level U Pro ANC</u></p> <h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>

Claim 54	Evidence
<p><b>54.</b> The audio system of claim 53 wherein the deactivation signal causes the electronic device to stop transmitting audio to be played in the headphones.</p>	<p>The Samsung Level U Pro ANC comprises an electronic device controller configured to receive a deactivation signal when a magnetic coupling of the headphones is detected and the deactivation signal further causes the electronic device to stop transmitting audio to be played in the headphones:</p> <p style="text-align: center;"><u>Level U Pro ANC</u></p> <h2 style="text-align: center;">Style &amp; Performance</h2> <p>The ergonomic, around the neck design of Level U PRO ANC provides a comfortable way to keep your music and calls accessible. Ultra-soft ear gels and splash &amp; sweat resistance** make it ideal for the active listener. <u>Control call and music functionality by way of smart magnets in the earbuds - start/pause music and answer/end calls when magnets are connected or disconnected.</u> You can even share your music with Sound Share, a feature that allows you to share audio with a second Level U PRO ANC, Level U PRO, Level On Wireless PRO or Level On Wireless headset.</p> <p style="text-align: right;">[19]</p>

Claim 55	Evidence
<b>55.</b> The audio system of claim 29 wherein the activation signal is sent wirelessly.	<p>The Samsung Level U Pro Active Noise Canceling ("ANC") comprises a CSR8675 Bluetooth audio systems on chip to send activation signal wirelessly:</p> <p>On information and belief, the Level U Pro ANC product use CSR8675 Bluetooth audio systems on chip ("CSR SoC"). The CSR SoC contains a micro-controller unit, which is an 80MHz programmable reduced instruction set computer. On information and belief, the CSR SoC also contains a Kalimba digital signals processor. On information and belief, the CSR SoC also includes a SPDIF and two PCM/I<sup>2</sup>S output ports and one SPI/ I<sup>2</sup>C integrated circuit communication protocol port. The figure below shows the architecture of the CSR SoC. On information and belief, the CSR SoC receives an activation signal when the earphones are magnetically decoupled. [12]</p>  <p>[11]</p>

CSR8675 Block Diagram



[12]

Level U Pro ANC

Connecting via Bluetooth

Bluetooth

About Bluetooth

Bluetooth is a wireless technology standard that uses a 2.4 GHz frequency to connect to various devices over short distances. It can connect and exchange data with other Bluetooth-enabled devices, such as mobile devices, computers, printers, and other digital home appliances, without connecting via cables.

Connecting to other devices

This headset is compatible with Bluetooth-enabled devices.

- 1 **Headset** Slide the Power switch to the right and hold it for approximately three seconds to enter Bluetooth pairing mode.  
When you turn on the headset for the first time, it automatically enters Bluetooth pairing mode.
- 2 **Other device** Activate the Bluetooth feature and search for Bluetooth devices.  
For more information, refer to the other device's user manual.
- 3 **Other device** Tap Samsung Level U Pro ANC (0000) from the list.

